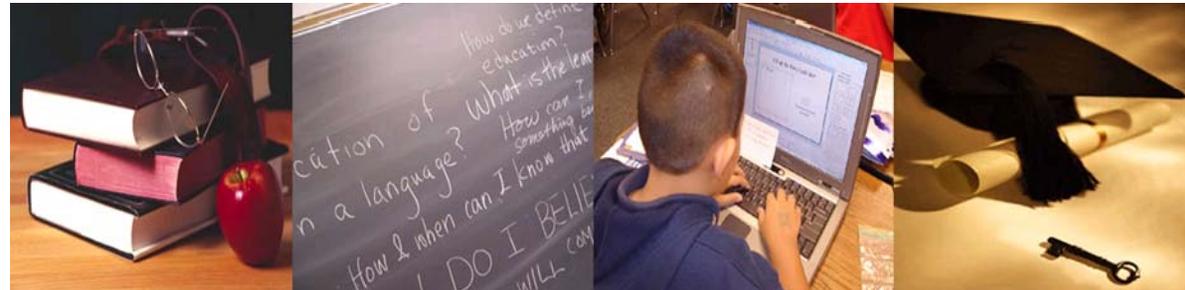




London International Conference on Education (LICE-2009)

November 9-12, 2009, London, UK

Sponsors



LICE-2009 Proceedings

Edited By

Charles A. Shoniregun

Galyna A. Akmayeva

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Message from the Steering Committee Chair

Welcome to the London International Conference on Education (LICE-2009). The LICE-2009 provides an opportunity for academicians and professionals from various educational fields with cross-disciplinary interests to bridge the knowledge gap, promote research esteem and the evolution of pedagogy. The LICE-2009 received 317 papers from 43 different countries of which 77 papers were accepted and 5 workshops. A double blind paper evaluation method was adopted to evaluate each submission and selected papers will appear in high impact International Journals.

Many people have worked very hard to make this conference possible. I would like to thank all who have helped in making LICE-2009 a success. Special thanks to the Publicity Chair (Galyna Akmayeva) for her never-ending effort. The Steering Committee and reviewers each deserve credit for their excellent job. I thank the authors who have contributed to LICE-2009 and our Keynote Speakers: Professor Mike Cole, Professor Joan Freeman, Professor Martin Ashley and Dr Hélène Perrault for agreeing to participate in LICE-2009. I also like to acknowledge my appreciation to the following organisations for their sponsorship: Elearningeuropa, Infonomics Society, World Scientific, Palgrave Macmillan, GoingToMeet and Customs House Hotel. It has been great pleasure to serve as the Steering Committee Chair for LICE-2009. The long term goal of LICE is to build a reputation and respectable conference for the international community.

On behalf of the LICE-2009 Executive members, I would like to encourage you to contribute to the future of LICE conference as authors, speakers, panellists, and volunteer conference organisers. I wish you a pleasant stay in London, and please feel free to exchange ideas with other experts.

A handwritten signature in black ink that reads "C. Shoniregun." The signature is written in a cursive style with a horizontal line underneath the name.

Professor Charles A. Shoniregun
LICE-2009 Steering Committee Chair

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Keynote Speakers

Keynote Speaker 1



Mike Cole is Research Professor in Education and Equality, Head of Research and Director of the Centre for Education for Social Justice at Bishop Grosseteste University College Lincoln, UK. He is the author of *Marxism and Educational Theory: Origin and Issues*, (2008, Routledge), and the editor of *Professional Attributes and Practice for Student Teachers*, 4th Edition (2008, Routledge), and *Education, Equality and Human Rights*, 2nd Edition (2006, Routledge). He is the editor of *Equality in the Secondary School: Promoting Good Practice across the Curriculum* (forthcoming 2009, Continuum).

Keynote Speech Title and Abstract:

Racism, schooling and education in the UK: a neo-Marxist analysis

In this Keynote Speech, I will begin by addressing what is distinctive about a neo-Marxist analysis per se. I then go on to provide my own definition of racism – a wide-ranging one, rather than the narrow one, based on biology or genetics, that was commonplace in the days of the British Empire. After that, I examine the differences between schooling and education. Next I attempt an analysis of the multifaceted nature of racism in the UK, both historically and contemporaneously. Finally, drawing in part on the new *Ley Orgánica De Educación* (statutory law of education) of the Bolivarian Republic of Venezuela, I outline some classroom strategies for antiracist practice in UK schools. These include the introduction of the concept of *learning without limits*. With respect to content, I advocate the promotion of antiracist multicultural education; the teaching of imperialisms; media education; and political education. Reference is made to the current recession/depression, and I argue that students have a *right* to discuss different economic and political systems such as twenty-first century democratic socialism. This represents for me the only viable solution to the total eradication of racism. The internet provides possibilities for linking up with students and socialist teachers in Venezuela for an interchange of ideas. There the revolution there is being led, to use an American nomenclature, by women of colour. Discussing antiracist democratic socialism in schools, I describe as ‘the last taboo’.

Keynote Speaker 2



Joan Freeman is a distinguished psychologist working in the development of human abilities to their highest levels. She has conducted and supervised substantial research, notably her continuing study of gifted children since 1974, and has published widely in this area, including 16 books. For the UK government she has written two major reports and provides advice. She is Visiting Professor at Middlesex University, London, Founding President of the European Council for High Ability (ECHA), Fellow of the British Psychological Society, Honorary Fellow of the College of Teachers and Patron of the National Association for Able Children in Education (NACE). Joan has given hundreds of invited addresses in most parts of the world and appears regularly on television and in the popular media. She has also been honoured

with the Lifetime Achievement Award from the British Psychological Society.

Keynote Speech Title and Abstract:

The UPS and Downs of Gifted Lives

Giftedness is not always what people think it is. Expectations can be contradictory to extremes. Where some see gifted children as loners with poor social skills, for example, others see them as gregarious natural leaders. Having to cope with other people's fantasy stereotypes can create great pressure on the children to fit in. This might be of a cute little girl wunderkind with a frilly frock and a violin, or a friendless boy with thick glasses. Parent's expectations may be unrealistic in expecting too much, which brings disappointment when they don't get it all. Alternatively, a gifted child can be stuck in an unstimulating environment, maybe getting constant put-downs as too clever by half. This presentation looks at Joan Freeman's unique 35-year study of gifted and non-gifted individuals. It is illustrated with film clips, notably from her ongoing Channel 4 series, 'Child Genius'. It shows how the gifted fare across the years, from a dizzily advanced two year-old, others in middle childhood, to mature adults, such as a milkman, a opera singer and an unemployed woman who was once a brilliant gifted child. Some fulfil their promise, though others do not. The vital key to success is opportunity, though personality makes a big difference - as does sheer chance.

Joan Freeman's fourth book on her longitudinal study - Gifted Lives - is to be published by Routledge / Psychology Press in May 2010.

Keynote Speaker 3



Martin Ashley is a Professor in Education and Head of Research Centre for Learner Identity Studies and the Sounding Edge music education project at Edge Hill University. Martin has researched extensively and published widely on the subject of boys and singing, particularly since the award on a new AHRC funded project to develop a major new resource to educate boys about their voices and stimulate their interest in singing. He has also researched both boys and dance and girls and physics and is interested in all aspects of role identity transgression.

Keynote Speech Title and Abstract:

Does for boys mean not for girls? Dangerous liaisons with single sex education and student/teacher gender identity

Recuperative masculinity politics in education are predicated upon the assumption that boys have fallen behind girls in most if not all subjects. In spite of ongoing and rigorous critique, the alleged “problem with boys” continues to command attention. Positive discrimination to help boys “catch up” is advocated by some as justifiable policy. The solutions put forward commonly include an increase in the number of male teachers on the grounds that boys identify with a same sex role model, “boy friendly” curriculum content, single sex schooling or the setting of certain subjects by sex within a co-educational school. The last of these has proved particularly attractive in those subjects seen as possessing inherent gender bias.

English, for example, can be seen as relatively “feminine”, though against this it is an important core subject which boys must master whether they like it or not. Music, on the other hand is relatively “peripheral” with regard to what must be mastered by all students and subject to strong gender biases such as the perception that singing is for girls whilst boys play rock instruments. To encourage boys’ willing engagement requires a particular effort to be directed against their perceptions of what is appropriate for their gender. Martin Ashley has been researching boys’ participation in singing for a number of years and has encountered every conceivable strategy in use, including those mentioned above. In this presentation he will share what he has learned about “boy friendly” content, student/teacher gender identity and single sex education through this research, exploring what lessons may be learned for other curriculum areas.

Keynote Speaker 4



Dr. Hélène Perrault is the Dean of the Faculty of Education at McGill University in Montreal, Canada. Previously, she was the Associate Provost (Planning and Budgets) and has served as Department Chair, Kinesiology and Physical Education. Holder of a Ph.D. in Exercise Physiology (1983) from the Université de Montréal, she remains a Professor in the Department of Kinesiology and Physical Education and an Associate Member of the Department of Medicine Division of Respiratory Medicine of the McGill University Health Centre. She has also been a Professor in the Laboratoire de Bioénergétique Fondamental et Appliquée of the Université Joseph Fourier in Grenoble, France. Dr. Perrault has been instrumental in the implementation of major undergraduate

and graduate academic program revisions, academic renewal as well as fostering cross-disciplinary interactions across several University faculties. She served as McGill senator between 2001 and 2005, contributed actively to several subcommittees of Senate and has chaired or served on numerous University academic, selection and administrative committees. A past-president of the Canadian Society for Exercise Physiology (1993-1996), Dr. Perrault has, and continues to foster academic and research collaborations between exercise sciences and medicine for health promotion, advancement of knowledge, and the development of therapeutic modalities and applications. Through funding as principal or co-investigator from several national and provincial granting agencies she has contributed to a large number of scientific publications and has supervised the work of numerous graduate students, which focused primarily on the physiology and/or the functional repercussions of chronic heart or lung disorders.

Keynote Speech Title and Abstract:

Physical activity, lifestyle and well-being: Translating public health messages into action

Scholarship has no value unless it can be translated into meaningful community actions. In fulfilling their mission of advancing knowledge, institutions of higher learning must therefore also ensure that they foster and sustain social consciousness and impact. The vehicle of choice remains Education. However, in order to ensure a successful impact in our complex world of the 21st century, education must occur in such a way as to transcend silos of knowledge and practices bringing together the elements from the natural sciences, the social sciences and humanities.

This presentation will a) review the strong body for evidence linking physical activity to various issues of public health interest and b) examine why in many cases the initiatives to impact community and society have add only limited success and c) proposes new approaches for translating the theoretical framework into meaningful actions. More than ten years after the “First Surgeon General Report on Physical Activity and Health”, data is more abundant than ever to show that physical activity practices can positively impact on prevention of many public health concerns and optimize management of a variety of chronic health conditions. The presentation will provide an update of what are the currently accepted influences of physical activity practices on various health conditions. Yet as will be shown, despite some twenty years of public health messaging on physical activity, lifestyle and well-being, the level of participation in regular physical activity remains below the projected targets. Where have we gone wrong?

It is now obvious that the traditional single view and one-size fits all prescriptive approach may not be appropriate for long term behaviour changes. Current health issues are often linked to multifaceted societal challenges that require multidisciplinary approaches. The challenge remains however to achieve a better understanding of the why and why not, the what, and the how of transdisciplinary research and training.

This implies that collectively we identify and acknowledge the barriers that currently prevent, impede or make it difficult to carry out transdisciplinary activities. These barriers may be related to the activities carried out by individuals in contributing to teaching and training, research and scholarship or to institutional administrative structures and practices. A key factor in the success of such an approach is to foster the interface with several communities of knowledge such that the appropriate environment, climate and the structures may be shaped and fostered. The first step is to ensure that qualities defining and promoting cross-disciplinary collaborations are well understood respected and supported. Secondly, it is essential that there is engagement at all levels, institutional, national or international to ensure that acquisition of knowledge may be appropriately translated into meaningful actions.

Workshop

Workshop 1: Enabling learners with social anxiety or shyness

This workshop aims to build awareness, confidence and strategies that will enable teachers to identify and support students and pupils who experience learning problems related to social anxiety or shyness. The workshop will be interactive, drawing on personal experience, evidence and reflection. The products of the workshop will be posted on a dedicated Wiki, which will facilitate continued discussion and collaboration beyond the workshop.

Organisers

Graham Russell (Health Psychology), Phil Topham (Counselling Psychology)

Workshop 2: One brick at a time': An ecological view of factors that influence student disengagement

This workshop offers participants an ecological view of the factors that contribute to educational disengagement for middle-years students. Individual, family, school and community perspectives are addressed. A 'hierarchy of needs for disengaged youth' model will be presented and discussed. A range of proactive and practical measures are offered that will assist participants in the development of plans that promote inclusive pedagogical practices within classrooms and schools. Content will be derived from research and the personal experiences of the presenter. The presentation will be supported by a range of case studies and initiatives/programs that the presenter has personally been involved with.

The objective of this workshop is to raise awareness of the plethora of risk factors that are often present in the lives of the young people that have disengaged or are in the process of disengaging from school. Stories, ideas and initiatives will be presented that have been seen to work and are sustainable.

Large numbers of young people are 'opting out' of school education. Some of these students remain in the classroom, some refuse to attend school and others are prevented from attending school. Traditional practices that promote undifferentiated curriculums combined with limited teacher understandings act as hurdles to student engagement.

Organisers

Jaroslaw (Charlie) Kotiw

One Brick at a Time: Reflections on Pedagogical Practice

Jaroslaw (Charlie) Kotiw
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Abstract

This paper examines a relationship between justice and the wellbeing of young people. Framed in an educational context it draws on my philosophy, research, and reflections on past and current professional practice. It investigates a range of factors that impact on school engagement and offers a number of recommendations. Schools systems have the dubious honour of being both a protective and risk factor in the lives of the young people that reside in the communities that they were established to serve. A democratic society does not tolerate discriminatory educational practices, embraces diversity and promotes inclusion. Nature and nurture have often 'conspired' in the lives of many young people in a manner that has made them a poor fit when it comes to satisfying the increasing range of demands placed on them in school environments. Demands expand, acceptable standards parameters contract, more children are labelled as unacceptable, more children are excluded. Schools need to resist the temptation to 'sit in judgement' on these children. A school's responsibility lies in the provision of an effective academic, emotional and social climate that is responsive to local community needs and is inclusive by nature and practice.

1. Introduction

A number of films have had an impact on my teaching career. For the purpose of this paper I would like to consider three. *To Sir, with Love* convinced me that I wanted to teach and particularly teach 'tough' kids. Released in 1967 this British film depicted the difficulties and achievements of a black teacher working with predominately white disengaged students from London's East End. *Wake in Fright* generated a certain amount of anxiety as I entered my first year of teachers college. Released in 1971, this Australian/American co-production is brutal and confronting in its portrayal of the fortunes and misfortunes of a genteel British teacher professionally 'trapped' in Australia's outback. I'm not British and probably would not be considered genteel, but soon realized how poignant this depiction was in terms of the life I encountered in my first year of teaching in

rural Australia. *The Castle* helped me fine-tune my philosophy on public education. Released in 1997, this low budget Australian production depicts the trials and tribulations faced by a family of loveable rogues as they defend their humble home against compulsory acquisition by developers. All appears lost at one stage, but then as a result of a chance meeting, the family ends up being supported 'pro bono' by an eminent retired constitutional lawyer and their case is won. The lawyer's address on appeal to the High Court of Australia is a pivotal moment in this film. He presents a simple argument, but one that is relevant across a number of contexts. He refers to the Australian Constitution and particularly the phrase: 'on just terms'. The lawyer goes on to state: "That's what this is all about, being just."

This paper will focus on developed and English speaking communities that provide publically funded educational facilities that are able to be accessed by children in their compulsory years of schooling. It will address issues associated with the estimated 10-30 per cent of young people that are not fully participating in public education with particular reference to those that would be regarded by their schools as sitting quite comfortably at the extreme end of the challenging spectrum. A global issue, this problem is compounded by the 'U' curve that exists with regard to teacher experience levels within schools.

We have alarming attrition rates amongst our young teachers at one end and then a 'bubble' of teachers in the 50+ category awaiting retirement at the other. Add national standardized testing and the associated 'league tables' and we have a recipe that can lead to discriminatory practices.

2. The philosophy

Education is about 'being just' and its provision needs to be 'on just terms'. A 'just' educational system is built on foundations formed by egalitarian values. These values support community integrity and reflect its priorities, ambitions and desires. Restrictive and exclusive school practices alienate individuals and are an indicator of a community's level of maturity.

Teachers have a responsibility to the communities they serve to provide the best possible education for the

children that are placed in their care. This duty is not contingent on whether children are prepared or able to comply with pedagogical requirements.

Abundant research has shown that there is a correlation between education and health. Research has also suggested that education has a causal impact on mortality [1]. These relationships underpin the primary purpose of maintaining an educational setting that encourages engagement on a number of levels, that being, it saves lives.

3. The Teachers

A holistic and sensitive approach is required if teachers are to effectively respond to the seemingly every growing plethora of hurdles that are confronting many of our young people as they attempt to maintain an engagement with their schooling. Teachers must remove themselves from the equation when it comes to being a risk factor in the lives of their children. In doing so they will evolve into a protective factor that promotes inclusiveness and supports diversity.

A focus on applied methodology will be required as teachers expand upon their understandings of cause-and-effect relationships in school engagement and then develop effective means to apply those understandings to improve attendance and participation rates. The acquisition of knowledge per se is of little value in this context, unless coupled with the means to practically apply it. It is incumbent on teachers to ensure that they explore and develop creative solutions to particularly difficult problems. It is also incumbent on the systems that exist to support teachers to ensure that teachers are adequately trained and mentored during this process.

The construction of a truly inclusive educational system requires a significant injection of honesty and sustained energy that is supported by creative responses which are relevant at a national and local level. A value analysis needs to be undertaken of current professional practices and outmoded and counterproductive elements eliminated. This process must resist the attraction of what some have called the 'Christmas Tree Approach' where educational priorities, initiatives and programs 'hang' from the school like Christmas ornaments, only to be removed when festivities are over. Perception can often be confused with reality and politically motivated rhetoric is often the means employed to convince communities that 'all is well with their educational world'. Whilst passion drives the pursuit of excellence it is sincerity that forms its foundations and supports its sustainability.

We must accept the fact that for a significant number of children, their families, and their teachers, the school world is an exclusive and insensitive environment that demands compliance. For many, this

world promotes undifferentiated and anachronistic curriculum that is supported by strict disciplinary models that are often more about the maintenance of order, image and school comfort zones than the provision of educational services and opportunities for all.

By all accounts, teaching is not getting any easier. Many teachers are 'buckling' under the strain of expanding professional expectations. Teaching 'subjects' has been replaced with teaching 'children' and teachers are now expected to respond to a vast range of variables in the classroom. A child's psychosocial and emotional needs are now part of the mix and need to be addressed as schools endeavour to 'produce' good citizens that are both literate and numerate. This is certainly a tall order and is a particularly difficult proposition when educators and children are faced with a curriculum that is often focused on the cohort that occupies the centre of the ability/behavioural bell curve.

Classroom teachers are the 'cornerstone' of an educational system and the children they work with our most vulnerable and valuable resource. The bureaucracies that surround our teachers, both at local and more distant levels, sometimes fail to fully appreciate this value as they develop their own demeanour and absorb limited resources that appear to be more directed toward self preservation than the provision of services to the very people they were established to support. The hardest and most valuable thing about teaching is teaching itself. The classroom has the potential to lift spirits to glorious levels or to 'burn a hole in the soul' of those that are not adequately equipped to deal with the demands associated with working with a diverse range of individuals and groups.

At a school level, children, families and colleagues place differing demands on teachers and it is expected that their resilience levels are such that all can be accommodated, often simultaneously. Introduce a media that thrives on controversy and politicians that promote 'school league tables' and we have formula that can lead to professional 'burn out'.

Few professions demand so much from their employees. Expertise is expected in management, administration and scholarship. Sound understandings are expected in the social and behavioural sciences. These demands draw heavily on a teacher's psychological, emotional and social capacities as they pursue a pedagogical path that is underpinned by the formation of strong relationships with all parties concerned.

Schools around the world are losing teachers just at the time when their experience, energy and maturity levels are at their most valuable, both in and out of the classroom. Schools are losing the middle-ground of the staffing mix, the group that often forms the social,

emotional and professional 'bridge' between new recruits and old warriors. Our young teachers are often more in tune with the cultural trends adopted and preferred by their students and typically of a similar age to the parents of the children they teach. These attributes support the formation of mutually respectful relationships and understandings between teachers, children and their families. Relationships of this nature are mandatory requirements in any school setting and are particularly helpful when it comes to 'engaging the disengaged'.

Recent Australian studies [2] have shown that over 50 per cent of beginning teachers surveyed did not see themselves teaching after ten years despite nearly half indicating that they had changed careers to start teaching. Teaching no longer appears a vocation for life and this is not only an Australian phenomenon. A 2003 report [3] found that in the U.S., a third of teachers leave the profession within three years and almost half within five years. In Britain, a 2003 survey by the University of Buckingham found that 30 per cent of teachers who left teaching that year had been in the profession less than five years.

There appeared to be common concerns amongst these young educators. It is not surprising that workload and behaviour management topped the list of reason for opting out of the profession. The Australian study found that around 60 per cent of beginning teachers found their pre-service teacher education to be in the poor to satisfactory categories with regard to practicum support and preparation for teaching. Significant concerns were also indicated with regard to working and dealing with difficult parents, difficult colleagues and those students that presented with additional needs associated with disabilities, dysfunctional backgrounds and cultural differences. The study also revealed concerns with professional support during the first three years of teaching. Over 45 per cent of respondents had never been formally mentored or been involved in a formal induction process and over 30 per cent had never been involved in behaviour management professional learning. In over 80 per cent of cases professional support was informally sourced from fellow classroom teachers.

Working across both school and tertiary sectors has enabled me to witness the dilemma that has confronted many of our young educators as they enter the profession. Tertiary life for many did not involve a 'gap' year with students often celebrating their 22nd birthdays in their final year of study. Tertiary life is often full of ideals and promotes philosophical development and professional reflection. 'Teased' by limited and often protected practicum experiences and fuelled by idealism our students often can't wait to enter their chosen profession. These young men and woman, often with limited life experiences, are then

confronted with the 'coal face' and soon become acutely aware of their limitations. Long hours, large unruly classes and inconsistent professional support structures can conspire in these formative years to erode confidence and self-esteem. More importantly, teachers may lose enjoyment in teaching as their enthusiasm is 'whittled' away.

Much can be done in a variety of contexts to support teachers during these often confusing and troubled times. A confident and capable workforce sets the tone for the development of an education system that prepared to take on the challenges associated with the provision of fair and universal education.

From a tertiary perspective partnerships could be formed between teacher training institutions and the schools that they provide for. One model that could be considered involves teachers reconnecting with their former tertiary institutions during their first few years of employment. A post-graduate qualification could formalize matters and schools would be asked to release staff for short periods during the second semester of their first and second year of teaching. New graduates would be provided with an opportunity to reflect upon their teaching and learning, to access further mentoring support, to access specialist information and to further develop skills that they recognised as being important in their profession. Contacts would be renewed with both staff and fellow students, experiences and ideas shared and a sense of collegiality fostered. Professional growth would be the focus of this exercise with increased confidence, skill development, further study and continued service the anticipated outcomes.

4. The Students

I have spent the past eleven years teaching in a specialist state funded unit working directly with middle-years students (ages 10-15) who were facing and generating significant problems in their mainstream schools. Twenty years of mainstream teaching provided a sound grounding but I soon found that there was still much to learn when it came to fully appreciating the factors that were at play in the lives of these students. Greater understandings gradually led to more effective programming with a resultant improvement in attendance and participation rates. More recently, I have been able to couple this work with tertiary duties that have involved lecturing in education with a focus on challenging behaviours, students at risk and managing learning environments.

My professional experience has made me acutely aware of the difficulties that some school age children can generate in mainstream classrooms and I am extremely sensitive to the needs of teachers and other students that are exposed to these often highly charged

events. I appreciate the concerns expressed by classroom teachers as they try and rationalize an approach that appears to commit too many resources to the needs of the few at the expense of the many. That being said, my allegiance is biased toward that every growing minority of young folk that are 'voting with their feet' when it comes to school engagement

The majority of young people that I have worked with during the past decade would be regarded by their teachers as the most difficult students in their class. Many have been involved with government services associated with child welfare and juvenile justice. Referred by mainstream school welfare teams, the students have often presented with a broad range of issues that have impacted on their abilities to achieve sustained success in school education. Multiple factors have normally been present and have included but are not limited to:

- Poverty
- Child abuse
- Difficult family circumstances
- Cultural discrimination
- Genetic predisposition
- Multiple school enrolments/disrupted school attendance
- Learning and language difficulties and disabilities
- Physical/cognitive/mental: impairments, disabilities and disorders

Mental disorders have included:

- Pervasive Development Disorders (Autism, Asperger's Syndrome)
- Disruptive Behaviour Disorders (ADHD, ODD, CD)
- Anxiety Disorders (PTSD, OCD)
- Mood Disorders (Depression)
- Attachment Disorders (RAD)

Indicators have included but are not limited to:

- Verbal and physical aggression
- Criminal / anti-social behaviour
- Substance abuse
- School / Family disengagement
- Low confidence
- Poor self-esteem
- Risk taking behaviour
- Lack of spontaneous enjoyment

5. The Schools

I am convinced that a connection with mainstream schooling is the best option for the children that I have worked with. We can't underestimate the value of school education when it comes to the impact that it can have on a child's life. We have a range of cultures and sub-cultures operating within the school environment, some open and some hidden. We have the open and dominant socio/academic culture driven by teachers and the official curriculum and then we have the often hidden culture that is driven by the socio/emotional needs of students, the hidden curriculum, as some have described it. The school environment is therefore operating on a range of levels and is a significant player in terms of the provision of social, emotional and cognitive 'nutrients'. Students learn as much in the playground as they do in the classroom.

The formation of social bonds, affiliations and attachments is a survival need and young people who are excluded from school are then often forced to seek and adopt the culture of the streets. This is the culture they understand, the culture that they can relate to, the culture that shares their concerns and provides a sanctuary. The street curriculum can be quite prescriptive and antisocial by nature and often incorporates extreme risk taking behaviours. Street groups can also be quite disparate in their make-up with school exclusion and the associated resentment acting as primary binding components.

An ecological and holistic view of the classroom promote understandings by teachers that children are different in a range of ways and that these differences need to be taken into account in the construction of a positive emotional, social and academic climate. Prevention is better than cure and can be initially promoted by sound teaching practices that do not target a specific cohort. Rules, routines, organization, management, predictability, consistency, fairness, fun, humour, enthusiasm and academic credibility are some of the ingredients that support the development of a creative and engaging learning environment.

The atmosphere of the learning environment impacts on all students and can generate negative responses from those that would be otherwise considered as well adjusted and normally engaged. For those that sit on the periphery, poor practices can lead to exclusion and disengagement. Eliminating teaching practice as a risk factor to engagement is a mandatory requirement and once achieved allows schools to more easily identify those students that may be at risk. These students regularly present with risk factors that are beyond the school's control but within its sphere of reference. The cohort is often loosely attached to the school environment, either on the premises or within

local communities. Once engaged, these students need teachers that can appreciate and cater for their individual additional needs.

Young people do not need to be held 'hostage' by risk factors and schools can play an important role in breaking this connection. Differentiated curriculum at the classroom level will encourage students to engage at their own pace while they focus their attentions on material that is of particular relevance to them. For some, engagement not content is the primary concern at this stage and is underpinned by a focus on the promotion of cooperative and mutually respectfully relationships. Success, fun and getting along are the creeds and once established will form the foundation that more academic pursuits can be built on.

Approaches of this nature should not be confused with the 'educational palliative care' category of options that are used by some institutions. Such programming does little more than 'caress' attendance statistics while maintaining a holding pattern until an age is reached where exclusion can be enforced.

6. The Families

The disruptive and disengaged students that I have encountered often came from family environments that were also disruptive and disengaged. The only thing predictable about many of these environments was their unpredictability. Parents or carers regularly faced significant life difficulties. Calamity appeared the norm, occasionally interrupted by periods of calmness. Past educational experiences were often not positive and normally involved significant conflict, exclusion and early departure. Generational resentment toward educational authorities was common and it didn't take much for conversations to deteriorate into emotionally charged accusations of teacher misconduct. With teachers blaming families and families blaming teachers, taking steps forward was not easy.

Families of this ilk are often tightly bonded by a mutual resentment toward authority. Children, irrespective of the abuse inflicted, will often hold a powerful allegiance to the family network and strongly resist any notion that might be construed as a criticism. Teachers need to be respectful of the complexities and sensitivities involved in these structures as they attempt to reengage families with education.

Families can be extremely powerful allies for educators and often have their children's best interests at heart. Partnerships forged with families based on mutual respect, a welcoming attitude and common objectives have the potential to disrupt negative pathways for young people.

7. Conclusion

The scope of this paper has not allowed for a detailed analysis of the variety of professional practice initiatives available to educators that have been seen to make a real difference in the lives of disengaged students. There are common themes in backgrounds of these students and in what works in dealings with them. These principles are generic by nature but are of particular relevance with these cohorts.

The provision of educational opportunities 'on just terms' is not a relative concept; it is either provided or it is not. A just community does not favour some at the expense of others. A just community recognises that an equitable distribution of resources involves a bias toward those individuals in greatest need. A just community recognises and promotes the potential of all of its members and understands that deprivation leads to instability, segregation, illness and an erosion of cultural integrity.

A school ethos that promotes inclusive practices needs to present a 'positive body language' in dealings with its community. Students and their families need to feel that their teachers and schools want them to be part of their communities and that every effort will be made to maintain contact and nurture positive relationships. Patience and understanding is a virtue within this context as success will often need to be measured in increments that may appear small to teachers but be regarded as major movements by children and families. Sound teaching methodology supported by holistic considerations of student needs assist in the development of formulae that supports educational engagement for marginalized groups.

The development of understandings is a gradual process, takes time, and involves all parties. Knowledge needs to be acquired, programs need to be designed, and action needs to be taken. This is truly a process that is constructed 'one brick at a time'.

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Workshop 3: E-Learning Workshop

The ELW-2009 workshop is expected to stimulate discussions about the future development of appropriate models, methods, and tools for building E-Learning. The aim of the E-Learning Workshop (ELW-2009) aims to address the main issues within E-Learning. ELW-2009 brings together researchers and practitioners interested in E-Learning.

Organisers

Galyna Akmayeva, Charles A Shoniregun, Kinshuk

Workshop 4: Cinema for reaching the emotions: Improving teaching skills and fostering reflection among medical students and faculty

This workshop offers participants how to use movie clips to help learners be more reflective, promote empathic attitudes, enrich professional values, and develop well-rounded qualities as human beings. Describe how to use the cinema teaching methodology in faculty development programs to build a more reflective teaching team, enhance better communication between teachers and learners, and encourage faculty to develop strategies to aid student learning.

Describe a systematic strategy for preparing movie clips for teaching including:

- Selecting specific scenes from movies
- Reviewing movies efficiently
- Assembling the scenes
- Preparing the clips

Organisers

Pablo González Blasco, Mariluz González Blasco, Marcelo Levites, Graziela Moreto, James W. Tysinger

Workshop 5: Hul'qu'min'um: A Canadian First Nations Language Meets Modern Day Technologies of Learning, Exemplifying the Potential of Partnerships to Revitalize Indigenous Languages

This workshop offers participants the use of technology as an instructional tool in an effort to revitalize a First Nations language and as a means to explore the potential of computer technology experts in partnership with Indigenous Groups in relevant areas including; distance education, economic development and language revitalization. Learn about the unique partnership involving a Canadian First Nation - Chemainus, and a local school district, Nanaimo-Ladysmith, both located on Vancouver Island in British Columbia

- How to partner with Indigenous groups in the areas of education, economic development and language revitalization.
- What are the technology needs of indigenous groups in the context of the Chemainus First Nation experience with an exploration of the currently limited computer technology resources available?
- How did a public school district form partnerships with local Indigenous groups in the context of the Nanaimo-Ladysmith School District?
- Why is language revitalization important to Indigenous groups?

Organisers

Stella C. Bates, Charlotte Elliott, Pearl Harris

Sessions

Session 1: Pedagogy and Elementary Education

Promoting transfer of learning across complex scientific domains of knowledge
(Safa Zaid El-Kilani, Adnan Doulat, Mansour Wreikat)

A Study of Approaches Used by Early Childhood Education Teachers in Malaysia
(Norsuhaily Binti Abu Bakar)

Educational Reforms – Post Basic Education (Grades 11-12) – The Case of The Sultanate of Oman
(Salha A. Issan, Nariman M. Gomaa)

Universal primary schooling and planning for improvement: The Ugandan experience
(Cleophus Mugenyi, Chris Chapman)

Examination of Singapore Teacher-Coaches' Perceived Motivational Climate in an After School Physical Activity Program: A Case Study Using Self-Determination Theory
(Mohamed I. Aris, Clifford J. Mallett, Michael Kellmann)

Twenty First Century Education Leadership (TFCEL) and its Challenges
(Mohammad Sayel Alzyoud)

Promoting Transfer of Learning across Complex Scientific Domains of Knowledge

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Abstract

This study explores the efficient way to restructure students' misconception in complex domains of knowledge, in which such restructuring would allow transferring students' conceptual knowledge into other related complex domains. The sample consisted of 16 graduate students studying a course in developing curriculum. Those students had been assigned randomly into two groups (8 students each).

1. Introduction

One goal of science education is acquiring sound conceptual knowledge about the world through the formulation of relationships among ideas - meaningful learning Ausabel [1]. However, the findings of empirical research show that the accomplishment of such goal is so difficult because students' theories about how the world works conflict with their scientific understanding, students' naïve idea in complex domain of knowledge works as a critical barriers that hinder further learning in many other related domains, and that such naïve perceptions are characterized by having a high degree of coherency, Smith, Blakeslee, and Anderson [12], Pocov' [9], Gomez, Benarroch, and Marin [6], Nussbaum and Novak [8].

Many approaches had emerged since the late seventies to solve this problem: The Piagetian' approach adopts constructivist frame work as described by Posner et al [10]. They used cognitive conflict strategies consisted of engaging students in Socratic type dialectic dialogue in order to make conceptual change. Carey [3] considers that the focus should be on how having the concepts in a particular domain actually affects transferring of reasoning to other complex domains (statable knowledge) - meta-cognitive skills by Brown et al. [2], history of science passes through a series of revolutionary constructions, understanding how the explanatory system changed through different stages, and how early scientists assign the proper idea that allows generation of the others, would be of great help to allow the transfer of restructuring from one particular domain of knowledge into other related domains. Zaid [14] showed that such method succeeded only with students who depend on logical

reasoning in understandings; the approach did not succeed with those who depend on their articulation for the scientific sentences while misunderstood their metaphoric meanings. Strike and Posner [13] show that the epistemological approach proved to be difficult for students with short span, low motivation and less interested in the nature of knowledge.

The ontological approach focuses on how students perceive reality, students have difficulty learning certain scientific concepts because there is a mismatch between the categorical representations they bring to an instructional context and the ontological category to which the science concept truly belongs, understanding complex domains of knowledge could be achieved by letting students comprehend the ontological differences between the levels of a complex phenomena and their characterization, such comprehending would provides a theoretical lens to overcome a conceptual obstacles that need to coordinate and integrate knowledge about ontologically distinct entities; those ideas which relate to children's natural framework theories provide a generative foundation for further learning (Duncan and Reiser [5], Chi, Slotta and de Leeuw [4], Kang [7]). However, exploring students' conceptual understanding and conceptual growth using ontological approach shows a consistency of patterns about the difficulty students find; students initially gave evidence of scientifically valid knowledge structures but then regressed to earlier primitive levels of understanding (Shymanasky et al. [11]).

The complex topics that were a target of investigation in most traditions of research about students' misconceptions are those related to kinetic energy, particulate nature of matter, light and heat, conservation of matter and energy, gene, ecosystem, plant nutrition, photosynthesis, metabolism, and energy transfer. The study proposes that by electing the key phenomena that opened the investigations in many complex domains of knowledge in the history of science- the original source of organic material in living organisms, make students aware of their alternative conception about, and then presents the scientific reasoning for the sequence of event related to the phenomena in linear narrative systematic way, such method would lead to automatic restructuring for students' coherent alternative conceptions in other related complex domains related to the core

issue- conserving of matter and energy. The sample was consisted from 16 graduate students studying a course in curriculum and instruction, assigned randomly into two groups (8 students each).

2. Analysis

The two groups of students were pretested by open ended questions about two different phenomena related to understanding conserving of matter and energy in organic material. The first group had been questioned about the substance that counts to the growth of plant. This phenomenon had been targeted by questions in the history of science, which leads to other investigations regarding conserving of matter and energy issues; the second group of students questioned about how the candle lost its substance during its lightening. This is an everyday life phenomena related to conserving of matter and energy issue. The result of the study shows that the first group of students had misconceptions regarding the cause of plant growth, believing that the substance of plant comes originally from organic compounds in the soil (beside water); the result also shows that the second of students had misconceptions regarding the way candle lost its substance, confusing the chemical change (burning) by physical change (melting). They believed that the candle lost its substance during lightening by melting. The restructuring of first group misconception regarding the plant growth had been accomplished by first; let them being aware of their naïve conceptions, then, the correct scientific ideas presented to them in a linear systematic hierarchical way by connecting the issue of absorbing minerals and water from the soil by the mechanism of photosynthesis and the components material of organic compounds. The restructuring of the second group misconception was accomplished by engaging them in dialectic Socratic type dialog, by making students aware that melting material does not equal in quantity to the material that is lost during candle's lightening, and candle's thread would take less than minute if it is burned without being connected to the candle's wax. Both groups were post tested using open ended questions regarding many phenomena related to conserving of matter and energy issue in organic material: the substance of plant growth, the loose in candle's material during its lightening, the loose of body material during exercise, the ultimate destiny of decay materials, and nutrient cycling.

3. Conclusion

The results of the study show that seven out of eight in first group of students succeeded in transfer their understanding about plant growth to other

related complex domains of knowledge, while engaging the second group of students in just Socratic type dialog about marginal phenomena - candle's lightening- did not promote the transfer of their understanding into other related complex domain of knowledge. The result of study shows that history of science could be used to guide the election of revolutionary type of knowledge that lead to other investigations in related complex domain of knowledge, let students being aware to their misconceptions about it, and then presenting the correct scientific idea about the whole issue in a linear systematic hierarchical way to allow the transfer of students understanding to other related complex domains of knowledge.

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A Study of Approaches Used by Early Childhood Education Teachers In Malaysia

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Abstract

This study is set in the context of an increasing awareness of the need for and importance of quality thematic based and play learning experience for preschool children to its crucial role and contributions to various aspects of child development. The Pelan Induk Pembangunan Pendidikan or Blueprint sets the policies and strategies in developing human capital development. Thus, the aim of this study is to evaluate and investigate teachers' perspectives on play and thematic based and the implementation of play and thematic based towards children's learning in preschool practice in meeting with PIPP. Teachers' perceptions of play and thematic based will be described and analyzed with respect to their definition, roles and values of play and thematic based in relation to children's learning. Two methods of data collection will be deployed. First, semi structured in depth face to face interviews will be carried out on 20 preschool teachers and 3 administrators. Secondly, observation based on a category system will be undertaken in 15 preschools across five different types of settings.

1. Introduction

Theorists and researchers paint a convincing portrait of the importance of play to development (Bornstein & Tamis-LeMonda, 2007; Roscos & Christie, 2007). Play is essential to a young child's health. Play releases tension, advances cognitive development and increases exploration. Play also increases affiliation with peers; it raises the probability that children will interact and converse with each other. During this interaction, children practice the roles that they will assume later in life. Teaching young children should be based on their developmental abilities and interest. Enrolling children in a pre-school program will help to lay the foundation for academics, social interaction skills, develop their gross and fine motor skills, improve their language and communication abilities, enhance

their creativity and build self esteem and self confidence in children.

2. Human Capital Development

Malaysia has gone through the first 15 year phase of development towards realising its aspiration to become a developed nation by 2020. In this regard, education has been instrumental in building national unity and producing the human resource towards the realisation of Vision 2020. Much has been achieved in the four main thrusts of education, namely in increasing access to education, increasing equity in education, increasing the quality of education and increasing the efficiency and effectiveness of educational management. In spite of the achievement gained, much more needs to be done in the next phase for the education system to leap forward to excellence of global standards.

Taking into account the drawbacks of the present system, the need to cope with the demands and challenges of globalisation and the New Economy and guided by the National Mission, the Ministry of Education has developed the Pelan Induk Pembangunan Pendidikan (PIPP) or Blueprint that sets the policies, priorities, strategies and action plans for improving the education system from preschool up to tertiary education in the five years of the Ninth Malaysia Plan.

The challenges to education in the Ninth Malaysia Plan differ from the previous plans. For example, the Eighth Malaysia Plan focused on producing adequate and quality human resource while the Ninth Malaysia Plan, guided by the National Mission, emphasises a more people-centred development and brings about a bigger agenda of developing human capital as a thrust to building a developed nation. The quality of the nation's human capital will be of utmost importance in the achievement of the National Mission. Human capital will be developed according to our own mould, which is holistic in nature, encompassing the acquisition of knowledge and skills including science and technology as well as entrepreneurial capabilities, uphold the cultural values of our society

and the internalisation of positive and progressive attitudes, values and ethics.

It is undeniable that the rapid growth and development in the country as well as the mission and vision toward education have increased the challenge of shaping future generation. One of the framework for human capital development is National Education Philosophy which formulated to develop an integrated curriculum with the aim of meeting this challenge and producing a balanced man. This philosophy is a guide to the form of early childhood program and in translating the goal into reality Malaysia generally based the development of the program on incorporation of Islamic intellectual thought and western contemporary theories of child development. One of the strategic programs for human capital development is expanding preschool education. There are a few issues and challenges in expanding preschool education which one of them is quality of preschool varied.

In Malaysia the terms Kindergarten or preschool have been used to refer to half day programs for children 5 and 6 years old, and in some settings there were provision for 4 years old children. The regulation of preschool education and its provision was stated formally in the Education Act 1996, chapter 2, p. 24-25 which was compiled by MDC Legal Advisers (1998). Malaysian government policy towards preschool was stated clearly in the Ninth Malaysia Plan as “a comprehensive policy on preschool education to increase access to preschool, enforce National Preschool Curriculum, Train preschool teachers and deploy assistant preschool teachers in developing human capital development. Accordingly the plan also stated the MOE would play a more important role in providing appropriate services for preschool education.

3. Purpose of Study

The main reason for conducting this study is to investigate approaches used by Malaysian pre-schools’ teachers particularly the concept of thematic and learning through play in child development and education and impact on the practicality of these two approaches in preschool learning activities and its relation to human capital development. Significantly, in Malaysia there is currently a lack of research available on the evaluation and investigation of the implementation of these approaches to learning in pre-school classrooms.

Rohaty (1992) stated that in improving the quality of pre-school education in Malaysia it is necessary to do more research on pre-school learning climates because Malaysia is left behind in terms of accumulating data regarding children’s learning climates in pre-school.

An evaluation study conducted by Educational Planning and Research Division (EPRD), Ministry of

Education in collaboration with UNICEF (1990) indicated that many pre-school teacher used a formal teacher-centred approach in teaching the children. The teaching style was found to be inappropriate and could have a negative effect on the children.

So, this study could describe the actual situation how play and thematic approach are understood by pre-school teachers and how learning through play and thematic-based are allocated in classroom practice across different kind of pre-schools as explained by teachers themselves. As a result of this study, factors impeding the progress of the implementation of learning through good quality play and thematic-based experiences in Malaysian pre-schools would be recognised.

4. Statements of Problem

In relation to Malaysian context, the implementation of Learning through play and thematic-based approaches in pre-schools faces many challenges in incorporating it in the early childhood curriculum. Children in Malaysian pre-schools are being educated in a formal way and this “formal world” will not allow for the needs of child development that leads to the challenges in responding to calls for more academic stress or academic monitoring. There seems to be a competition with each other among the pre-school providers to attract “customers” and to show that their school is the best and excellent in educating the children. Ling Chu Poh (1983) stated in his study that the vast majority of pre-school in Malaysia implemented a vary academic and formal curriculum.

In 2001, Ministry of Education institutionalised preschool education to increase access to and to improve the quality of preschool education. Concurrently MOE developed and enforced the implementation of the National Preschool Curriculum for children aged 5-6 at all preschools and provided training for preschool teachers to ensure the quality of preschool education provided by either the public or private sector.

Other challenges, pre-school education has still not received proper attention from the government. According to EPRD, Ministry of Education in the 11th. Civil Service Conference dated 21st-22nd. August 2006, there is low access to pre-school especially in rural areas and low readiness to schooling. There has been no real attempt by the government to establish a properly funded, co-ordinated service for young children which offers parents the child learning environment and facilities they need, but giving priority to the development of secondary and higher learning institutions. The ministry’s role has traditionally been limited to the preparations of the curriculum and the registration of pre-school centres.

Other factors, is lack of provision for early childhood development and education. This situation leads to the challenge of the lack of materials, environment and sources created for play and thematic-based.

Evidence from the research conducted by Ling Chu Poh (1988) shows that Malaysia lacks pre-school teacher training and continuing professional development. The existing regulation and registration as a pre-school teacher possess minimum academic qualification that is Sijil Pelajaran Malaysia. No professional training is required prior to being a pre-school teacher and they do not need to have any experience working with young children.

Meanwhile, the implementation of Learning through Play and Thematic-based also faces challenge of the lack of teachers' understanding of the needs of child development and the importance of those approaches to young children. The teachers have limited knowledge of how play should be implemented in classroom practice and teachers just ignored to the children whenever play-time is involved. Teachers implement thematic-based using teacher-centered and in formal activities.

Many education experts, though, worry about academic approaches that place too much pressure on young children to achieve and don't provide any opportunities to actively construct knowledge. Competent early childhood programs also should focus on cognitive development and socioemotional development, not exclusively on cognitive development (Kagan & Kauerz, 2009).

5. Research Question

1. How does administrators understand the approaches (particularly Learning Through Play and Thematic Approach) in child development and education to ensure the dissemination in implementation?
2. How Malaysian Pre-school teachers understand the approaches (particularly Learning Through play and Thematic approach) that they used in their teaching in relation with human capital development?
3. How is the approach of Learning Through Play being implemented in classroom practice?
4. How is the Thematic approach being implemented in classroom practice?
5. What are the problems faced by Malaysian pre-school teachers in carrying out these approaches in pre-school?

6. The Oretical Framework

The literature review of the study has covered research on the importance of Play, Social Development and Play, Cognitive Development and

Play, ,the Using of Thematic Approach, Teacher's role and Child education from the Islamic perspective.

7. Research Methodology

7.1. Introduction

This chapter explains the research design used and describes the sample, and instrument used. It also shows the data collection and data analysis procedures. This research employs the qualitative approach which involves observations and face-to-face interviews. According to Bell (1999) researchers adopting a qualitative perspective are more concerned to understand individuals' perceptions of the world and seek insight rather than statistical analysis. Therefore, the qualitative method was chosen as a strategy which tends to focus on exploring in as much detail as possible.

7.2. Research Method

This study is a qualitative descriptive research. Qualitative research is to enable the researcher to get descriptive data. The character of the descriptive research was explained by Manion & Cohen (1994), "descriptive research being fundamentally different from experimental research is that the former, researchers account for what has already occurred; in the latter they arrange for events to happen. This overall balance in the text reflects the fact that the majority of educational studies that are reported in the literature are descriptive rather than experimental. They look at individuals, groups, institutions, method and materials in order to describe, compare, contrast, classify, analyze and interpret the entities and the events that constitute their various fields of enquiry" (p.67).

This study uses the qualitative methodology to present and analyze the collected data which will obtained from observations, and interviews. According to Patton (cited in Best & Kahn, 1998) the qualitative research uses different forms of data from those used in traditional research methods.

"Qualitative methods consist of 3 kinds of data collection; (1) in-depth, open-ended interviews; (2) direct observations; and (3) written documents. The data from interviews consist of direct quotations from people about their experiences, opinion, feeling and knowledge. The data from observations consist of detailed descriptions of people's activities, actions and the full range of interpersonal interaction and organizational processes that are part of observable human experience. Document analysis in qualitative enquiry yields excerpts, quotations or entire passages from organizational clinical or program records; memoranda and correspondence; official publications and reports; personal diaries; and open-

ended written responses to questionnaires and surveys". (p.240)

7.3. Methodological Triangulation

In the fieldwork study, the data in this study will gathered by using multiple methods or methodological triangulation 'where different strategies are used to investigate the results', (Tilstone, 1998, p. 33). This study applied the first, third and fourth types of triangulation advocated by Denzin (1978) whereby the distinguished four types of triangulation: data, investigators, theories, and methodology. The data triangulation represented in this study refers to the use of different kind of data at different time, different spaces and from different persons involving interviews and observations. As the third type of triangulation, this study approach data with multiple perspectives and various theoretical points of view of western and Islamic Thoughts. Finally, as a fourth type, between method triangulation will used through combination between semi-structured interviews and structured observations.

7.4. Data Collection Procedures

7.4.1. Face-to face Interviews

The main method use in the data collection is in-depth face-to face semi structured interviews with teachers, administrators, and policy makers. Hutchinson (1988) proposed that interviews permit researchers to verify, clarify or alter what they thought happened, to achieve a full understanding of an incident and take into account the "lived" experience of participants. In addition, semi structured interviews provide an elaborated in depth response.

Seidman (1998) stated that a basic assumption in in-depth interviewing research is that the meaning people make of their experiences affects the way they carry out that experience. The semi-structured in-depth face-to-face interviews in this study will held with teachers and administrators in order to assess their views on the approaches used pre-schools' classrooms and its contribution in children's learning process. The interview with the policy maker specifically from the Ministry of Education will conducted in order to consider if there is coordination between policy and practice.

7.4.2. Small-scale Structured Observation

The second method used in collecting the data is the small scale structured observation. The use of small scale observation with intend to observe how play and thematic-based implement in classroom

practice, teaching style and overall teaching learning climates in pre-school settings across five different type of pre-schools. The observation schedules, based on a category system will used to observe teachers in terms of teaching style, learning activities and overall teaching learning approaches in the pre-school classrooms.

Observation in this study will used to validate or corroborate the messages obtained in the interviews. According to Robson (1999) a major advantage of observation as a technique is its directness. In this study the directness of observation can usefully complement information obtained by interview. The method may provide evidence for certain queries. The findings will recorded using observation record sheets and a video camera for data collection.

7.5. Instrument Design

7.5.1. Semi-structured Interview

The task is to develop semi-structured interview that is precise and comprehensive concerning the problem area, so that the required data could be gathered and analysed. The interview questions for teachers will cover on their understanding and perception of the approaches used by them in teaching and learning and its relation with the nation's vision and Ministry of Education's Blueprint. The concept and the role of play and thematic-based in children's learning; the implementation of the approaches and problems faced by teachers in carrying out the approaches in classroom practice. The interviews with administrators will include the profiles of the pre-school understudy, the curriculum, their comments on the method of teaching young children and their perception toward play approach and thematic-based approach. The interview with policy makers will include their comments about the approaches designed in Malaysian Pre-school; reasons of designing such approaches, their views pertaining teaching and learning in Malaysian Pre-schools' today and challenges faced toward the mission and vision of Ministry of Education's Blueprint 2006-2010 in human capital development.

7.5.2. Analysis Procedures

The data is presented by transcribing in verbatim. Themes will used in transcribing the data and discussing the results. Denzin (2000) suggests that Themes are abstract constructs that investigators identify before, during, and after data collection. There is more than one way to induce themes – looking for evidence of social conflict, cultural contradictions, informal methods of social control,

things that people do in managing impersonal relationships, methods by which people acquire and maintain achieved and ascribed status and information about how people solve problem.

The study will be done in two states – Selangor and Terengganu. The Researcher will applied permission from the State Education Department of both countries stating the school intended as the first step. The next step after obtaining the letter of approval is approaching the pre-schools seeking permission from the principles or administrators either by writing or through telephone conversation.

The data will be collected in three stages. First, by visit or telephone to the schools, explaining the aims of the study and to establish a good rapport and relationship; and then to agree date and time for interview.

Second, the Researcher will be conducted the interviews with 20 teachers, and three administrators in each type of pre-schools. All the interview sessions will tape recorded for the process of transcribing the data.

The third stage is related to the observational method of data collection. These small-scale observations will made throughout the pre-school session.

7.5.3. Data Analysis

The tape-recorded interviews from each of two groups of participants (teachers and administrators) will transcribe and analyse using traditional method of qualitative analysis.

The following steps will undertake in analyzing the interviewing data:

1. The Researcher will transcribe the recorded interview word by word into written form. Some interviewees' answers consider as "out of topic" will ignored.
2. The interviews will be conducted in Malay language. The Researcher will translate the answers into English language without altering the style of the participants' language.
3. All the data which will transcribe in the special form will read carefully, then the important words or phrases for each of the interviewing answers or prompts will be highlighted and summarized.
4. The data will be analysed according to the chronological number of each participants. For example, for Q1 will be answered by teacher 1, teacher 2 and so on. (step by step)
5. Similarities and differences among participants will identified with reference to their answers to each number of interview questions.

6. Classification for each phrase mention by interviewees will made by giving specific theme/title.
7. Overlapping answers will identified throughout the interview.
8. The Researcher divided the data into several themes in discussing the results.
9. Some examples of the full script of several data transcriptions will translated in English will be prepared.

The data gained from observation schedules will also analysed using traditional method of qualitative analysis. In analyzing the observation schedule used in this study, the raw data in a form of words and anecdotal recording will transferred into summary sheet tables.

8. Population and Sample

The population in this study refers to all pre-schools in Malaysia. The pre-schools in Malaysia are organised and set up throughout the country by various agencies and providers.

8.1. Participants

Pre-schools' teachers and administrators are the subjects of this study for interviewing purposes. In terms of observational method of data collection, the randomly selection teachers and their teaching and learning approaches in pre-school classroom are the target to obtain the data.

8.2. The pre-school Teachers

A total of 20 teachers (two from each of 20 pre-schools) will involved in this study. These teachers varied in terms of their teaching experiences and qualifications.

8.3. The Pre-schools Administrators

Six administrators, one or two of the 20 settings will involved in this study.

8.4. The settings

The sampling of this study will involved 10 pre-schools in the state of Selangor and Terengganu, Malaysia from five different types of agencies. This include two under the Ministry of National Unity and Community Development, and two under the Ministry of Education preschools as representative of government funded; two university based preschools as representative of quasi-government institution; two Muslim Youth Movement (JIM/ABIM) pre-schools as NGO representative;

and two private pre-schools. All the settings will stratified in terms of location, either urban or rural area.

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Educational Reforms Post Basic Education (Grades 11-12): The Case of the Sultanate of Oman

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Abstract

Ensuring universal access to education to all Omani citizens and provide them with lifelong skills that enable them to compete in an increasingly globalized world are the main features of the educational reforms in Oman with the intention of moving towards the new modern society.

1. Introduction

The history of the modern educational system is not long, since its beginning was only in 1970. One can recognize three stages in the development of education in Oman: Stage one emphasized the rapid quantitative development of education; Stage two initiating serious efforts in the early 1980s by the Ministry of Education to improve the quality of education; and Stage three, started in 1995, by introducing a number of reforms after the Conference on Oman's Economic Future, Vision 2020, in order to cope with the educational requirements of the future [1].

2. Literature Review

Recent education reforms in Oman illustrate the very commendable efforts undertaken over the past three and a half decades in building an education system to meet people's need within the Sultanate, and to ensure its constant development. Numerous other improvements have taken place i.e. the structure of the school system, curriculum and textbook development, and student assessment, indicating the significant efforts and investment that the government has initiated.

Oman is an open and oil-based economy. The development of liquefied natural gas (LNG), public investment in the infrastructure and growing diversification of the economy has helped in moderating the dependence on oil. This kind of economic structure demands diversified skills and competencies that satisfy the emerging economy sector's needs.

Oman's economic policy-making draws on a series of five-year plans that set objectives for all government sectors. Economic planning evolves

from a consultation process with inputs coming from governmental and non-governmental bodies, with the Ministry of National Economy drawing up the five-year development plans.

By 1995, Oman had completed four five-year plans. "Vision Oman 2020" outlines proposals for the Sultanate's development over twenty-five years to 2020. It takes into account the far-reaching changes in the world economy and the revolution of IT that has transformed the global system of production [2].

3. The New Education Reforms

The new educational reforms were planned and implemented after 1995, particularly after 1998 when a basic education system was introduced. Important aspects had crystallized the new reforms i.e. improved Ministry of Education structure and procedures; changes in the structure of the school system; changes in curriculum content and textbook development; changes in student assessment; improved teacher training; encouraging the private sector to enter the education field and others [3].

Changes in the structure of the school system refers to a change in the structure as a whole, away from 6- 3-3 levels respectively to the new unified ten-year system of basic education (BE) with two cycles i.e. cycle one (grade 1-4) and cycle two (grade 5-10), followed by the post-Basic education (Grades 11-12) or vocational training. Implementing BE system will reduce the drop-out of students at an early age. The changes in curriculum content and textbook have been one of the most important aspects of the new reform. Two issues were given particular attention, first, the content of the curricula, and second, the teaching methods. Regarding the later, teachers were advised to refrain from basing their teaching and assessment on rote learning and memorization. The workshops and other means of training were held to train teachers to apply learning through experience away from a Teacher-centered approach. The M. of Ed. in Oman fostered the application of the Child-centered approach, and emphasis of the new curricula, where critical thinking skills and problem solving capacity among students is implemented, as well as providing

opportunities for practical experience to real life situations.

Concerning the content of the curricula, consideration was given to: areas of knowledge taught to students in developed countries and relevance to the culture and other conditions of Omani society as well as to the age, background and level of thinking of the learners [4]. With regard to textbook development, according to the Oman country profile, the Ministry of Education provides all textbooks at no charge to all students, and through experts and specialists, the tasks of revising, modernizing, and developing the contents of textbooks and all relevant elements of curricula. The country profile further indicates that the content of the instructional materials take account of international trends, the needs of Omani society and the overall development objectives [5]. One of these objectives is to link education outcomes with labour market demands. The introduction of computer studies, information technology and life skills and the emphasis on experiential learning and practical work within the framework of general education has been one way of responding to that need. Because of the great increase in the number of hours during ten years of basic education (3,907 additional hours), the possibility was created for strengthening science courses (including mathematics) and English language courses. Information technology (120 hours) and computer skills were also added (264 hours). The implementation in the curriculum shows that the Omani educational authority is quite conscious of the implications for Oman and of the globalization process underway [6].

4. Discussion

One aspect of recent curricular reform has been the introduction of environmental life skills, as mentioned before, in order to link school learning with the student's local environment characteristics and needs. Fields such as geography, health, ecology, nutrition, traditional culture and craft, family life, citizenship and many other subjects related to the knowledge requirements of each age group are introduced. Ensuring the transfer of skills and knowledge into the students' practical world has been the main focus of the environmental life skills programme and textbooks. It is too soon for outside observers to make an accurate evaluation of the degree to which changes in the curriculum content and teaching methods have responded to expectations. There is no doubt that some of the proposed changes correspond to the best practices in the developed countries such as making students the centre of education, encouraging students to investigate and find answers to questions themselves, promulgating experiential learning and work in co-operative groups, and inviting students to express

their views and engage in participatory learning. But it is legitimate to ask how successful teachers and administrators have been in introducing these recommended practices.

As the reforms have not been fully implemented and the old system and the new one (basic education) are co-existing, an overall summative evaluation is left to the future. The evaluation work that is being done now relates more to the implementation process (formative evaluation) than to the whole philosophy of the reform.

5. Conclusion

Constraints and obstacles facing the implantation of the reforms still lies ahead since the majority of Omani job-seekers are secondary school leavers. Most of them have no professional or vocational qualification, which prevents their integration into the labour market or, position or jobs offered may prove to be unsuited to the competencies of individuals, and some positions and jobs may require skills, competencies, or specific knowledge that the applicants do not possess [7]. Additionally, seeking the academic route by the majority is still predominant [8].

Educational reform responded to computerization and access to the internet but, are teachers prepared, is the current question. Strengthening collaboration and partnership between the Ministry of Education and labour sector and the expansion of technical-vocational education could be a solution.

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Universal primary schooling and planning for improvement: The Ugandan experience

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Abstract

The paper reports initial findings of ongoing research into the perceptions and experiences of different stakeholders about improvement planning in primary schools. This phase of work has involved a quantitative study of 62 schools in one district. The findings are based on data obtained from 60 headteachers, 112 teachers and 7 school development officers. The data was analysed by SPSS software to produce descriptive statistics and test for significance between key variables. The key findings highlight that development planning has a potential to contribute to school improvement. However, different stakeholders have different experiences and understanding of the process.

1. Introduction

Before 1997 only 50% of children between the ages of 6 and 12 attended school in Uganda. The government recognised this situation was untenable if Uganda was to compete in a modern and increasingly globalised world. The first step taken towards developing the education system was to improve access and equity. Part of this strategy involved the introduction of compulsory primary education for all children. However, it was soon realised that attending school is a necessary but insufficient ingredient for success. In 1998 the government introduced a 5-year (1998 – 2003) strategy for school improvement, which was succeeded by a ten-year (2004 – 2014) plan to meet the targets of education for all by 2015 [6]. The core element of this strategy was to improve access, equity and quality of primary education. School improvement planning was therefore introduced to enhance schools' capacity to manage challenges of universal primary schooling.

The study reported in this paper therefore focuses on improvement planning in one district in western Uganda which was introduced and implemented with donor support since 2001 to date. The main objectives of the two-phase programme (2001-2006 and 2007-2010) include improving teaching and learning, school leadership and management, and promotion of community participation in school activities. The study seeks to contribute to the understanding of planning practices in schools by examining improvement planning process from the perspectives and experiences of local key stakeholders (headteachers, teachers, inspectors of schools, school development officers, and chairpersons of school management committees).

2. Body of knowledge

School improvement planning is intended to be continuous process by which stakeholders identify objectives, priorities and targets to be attained within a specified timescale using available resources to improve all aspects of schooling. The time frame for school plans ranges from one to five years and reflect aspects of operational, developmental and strategic planning [2]. The planning process involves audit, design, implementation and evaluation [4]. The process of school improvement planning has been implemented across many education systems, and has become specially very well established in the western world; there is a literature base that links improvement planning to effective schooling [8].

Uganda adopted school improvement planning in response to the challenges associated with universal primary schooling and decentralisation of primary education to local governments. The Ugandan government views school improvement planning as an appropriate mechanism for empowering local communities to make decisions on how school resources should be used,

and how they can be supplemented to achieve improved teaching and learning [3]. Adequate understanding of improvement planning processes has been identified as vital to the success of concerted efforts that rely on involvement and participation of local stakeholders in school management systems [1],[4]. The participation of stakeholders in the areas of school planning has been identified to enhance collaboration, team work and ownership of improvement plans [5], [7].

Although, most studies have focused on the process and impact of improvement planning; few have examined how and why stakeholders are involved in improvement planning. In addition, some studies have failed to determine the contribution of local stakeholders towards the improvement of school management even in countries that implemented universal primary schooling. The involvement and level of participation of stakeholders in the planning process affects the implementation, impact, outcomes and sustainability of improvement planning both in short and long term. The study sets out to examine the involvement of different stakeholders in the design and implementation of improvement planning and how their participation contributes to the impact and outcomes. Research suggests that purposes of school improvement planning include accountability to the public, improving the quality of teaching and learning, management of change, management of multiple innovations; improving school management and leadership [1], [4],[5]. The present study explored the extent to which some of these elements have been attained in schools. Among the significant benefits of improvement planning identified by the respondents include: improvements in the quality of teaching and learning, involvement of stakeholders in school activities and school infrastructure improvement. The study also identified factors that acted as barriers to implementation including insufficient finances, inadequate support from parents and absence of collaboration amongst stakeholders.

3. Conclusion

Preliminary findings indicate that improvement planning led to improvements in several aspects of schooling: coordinated inclusive planning, rehabilitation and construction of school infrastructure, teamwork and accountability were some of the best practices benchmarked. However, inadequate resources

significantly limited the extent to which some schools would implement their plans and low performance on primary leaving examinations indicates that improving the quality of primary schooling in Uganda remains a challenge. The perceptions of stakeholders about why and how improvement planning has impacted on quality of education in primary schools will be explored in the second phase: a qualitative case study of nine schools through interviews and document analysis. The findings may assist the district leadership and schools to address the identified challenges and design appropriate policies for improvement and sustainability.

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Examination of Singapore Teacher-Coaches' Perceived Motivational Climate in an After School Physical Activity Program: A Case Study Using Self-Determination Theory

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Abstract

The main purpose of this study is to examine a change in motivation and degree of learning environment in co-curricular activity (CCA) setting, and whether it produces positive outcomes in motivation of student-athletes. According to self-determination theory, human behaviour is controlled by the satisfaction of three fundamental psychological needs which are the need for self-determination, competence and relatedness. In Singapore, PE teachers perform inter-related roles teaching PE and as coach during CCA. The Singapore Education Ministry's policies had provided guidelines for PE teachers to engage students to be more physically active in school. In reality, there is a possible mismatch between policies and the practices in schools among other possible reasons. 98 (m=66, f=32) PE teacher-coaches participated in this study. Results showed that there is significant difference ($p<0.05$) between male and female PE teacher-coaches in their motivational profiles in coaching. However no significant difference ($p>0.05$) in the motivational climate they created.

1. Introduction

Physical education (PE) has been recognised as contributing to public health goals such as increased physical activity among youths, as long as there is an implementation of well-functioning curricular programmes that enhance satisfaction and interest [1]. Also, organized sports such as school-based non-curricular forms of physical activity (i.e., CCA), can promote physical health benefits for youths [2]. Generally viewed as a formal part of the curriculum, a key tenet of the PE system is to promote lifelong participation in physical activity which will, in turn, lead to their overall physical well being [3]. In contrast, organized school sport in the co-curricular activity (CCA) programme, is considered as a subsidiary of the PE curriculum, which is also very important for the schools' status and image [4].

2. Literature Review

Positive experiences resulting from involvement in competitive sport may have been the original motivation for becoming a teacher-coach. According to self-determination theory, human behaviour is controlled by the satisfaction of three fundamental psychological needs which are the need for self-determination, competence and relatedness [5]. PE teachers are also attracted on the basis of their continuing association with sport and they are influenced by former coaches and PE teachers as well as their families' sporting involvement [6].

PE teachers in Singapore are in most circumstances, employed to teach PE in schools and also as teacher-coaches in the CCA programme. Every secondary school student in Singapore is to take part in at least one CCA per year and they are free to choose what type of CCA they would like to be involved in [4]. Students who do well not only academically but also possess athletic and leadership potential in sport will have a higher chance of securing scholarships and bursaries, and may even gain a direct admission to any participating Junior College or Polytechnic of their choice for post secondary education as long as they meet the eligibility criteria set by those institutions [4]. The need for Singapore pupils to get good quality PE lessons is even more pressing in today's context as parents in Singapore firmly believe that schools are the only place where their child can participate 'safely' in physical activities with 'adult supervision', whether during curricular PE lessons or CCA. One important social environmental factor assumed to nurture the basic needs of the students is the learning climate created by the teacher during the PE lessons or CCA [7]. Thus, this research hopes to find whether these teacher-coaches are motivated enough to carry out their duties as a PE teacher or as a coach effectively in accordance to the MOE guidelines. As teacher-coaches' behaviours shape the learning climate, it is also imperative to know what are their main reasons for teaching and coaching.

3. Methods and results

There were three sub-components of analyses conducted. The first was to analyze the demographic data of the PE teacher-coaches, second was to analyze their motivational profile and lastly the motivational climate created by them i.e., PE teacher-coaches in Singapore.

A total of 98 (m=66, f=32) PE teacher-coaches participated in this study. Almost half of the participants, aged between 31-40 years took part in this study and 40% of the participants have at least more than 5 years of working experience in the education service. In addition, nearly 78% of the participants have at least a degree or a post graduate diploma before they joined the teaching profession. A 24-item, revised six-factor Sport Motivation Scale was used to measure the contextual motivation that is intended to identify the perceived reasons for participating in sport [8]. The original 26-item version of the PE Class Climate Scale [9], was shortened and modified into a 10-item questionnaire for this study to measure only two key aspects of perceived motivational climate created by the teacher-coaches and (i.e., mastery-oriented or performance-oriented), while performing the teaching and coaching roles. Results showed that there was significant difference ($p < 0.05$) in the non-self determined forms of motivations between male and female PE teacher-coaches in both settings. However there was no significant difference ($p > 0.05$) in the motivational climate which they had created.

4. Conclusion and recommendation

According to practices in many countries throughout the world, PE teachers both teach curricular PE lessons and coach co-curricular school teams [6]. Teacher-coaches usually choose the area of greatest rewards and recognition when they have to decide how to spend their time. Moreover, the reward systems within the schools often favour coaching over teaching in terms of better job evaluations, remunerations and promotion opportunities [6].

In this study with Singapore PE teacher-coaches, it is interesting to note that regardless of sex, experience and qualifications that the teacher-coach possessed, there is no significant difference in the motivational climate which they created in both teaching and coaching settings. However, there is a significant difference in the motivational profiles between the participants in terms of non-self determined forms of motivations. It is clearly showed that in general, male PE teacher-coaches

have a higher form of non-SDEM towards teaching and coaching as compared to their female counterparts.

To support the earlier research, an intervention study based on the motivational model of coach-athlete relationship [10] will be carried out with Singapore PE teacher-coaches, in particular PE teacher-coaches who exhibit a more dominant non-self determined forms of motivations when teaching and coaching. The follow up study hopes to find out whether change in motivation and degree of learning environment in co-curricular activity (CCA) setting, can produce positive outcomes in motivation of student-athletes.

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Twenty First Century Education Leadership (TFCEL) and its Challenges

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Abstract

This research aimed to identify the features of the twenty first century education leadership and its challenges from the perspective of Arab educators. The research followed the qualitative approach based on using the interview as a basic research tool. Accordingly, an interview was conducted with each subject of the study sample, which consists of (20) educators. The findings of the research were analyzed according to the research questions. The findings of question one showed that Arab educators specified the features of the twenty first century education leadership in various ways; it is the process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent; it is a process of leading people in the right direction in order to achieve goals; it is the process of directing the talents and energies of teachers, pupils, and parents toward achieving the common educational aims. Also, findings of question two revealed that, from Arab educators' perspective, many challenges have faced education leadership in different ways; some educators stated that education leadership faced some sort of resistance to change by parents, students, school staff who held and believed old fashioned principles; also, the lack of financial support and resources stood as a challenge in the face of education leadership; implementing and developing programs into reality was another challenge; in addition to the absence of effective educational leadership training programs; lack of effective human resources that can give a hand to make things happen.

In light of the findings of this research, a set of recommendations has been suggested by the researcher for a better understanding of TFCEL and its challenges.

1. Introduction

As the first decade of the twenty first century is about to conclude and the educational standards are still a way from the international level in many aspects of the Arab educational systems. The responsibility to improve and raise the standards is the job of educational leaders at all levels; teachers,

principals, counselors, advisors, policy makers, etc. Arab educational leaders in the twenty first century need to be professional in term of their knowledge and skills. But it is widely believed in the Arab countries that TFCEL is unreal. This is referred to the current situation of educational system in most Arab countries which is still far from introducing the features and components of TFCEL. In contrast with what Arab educational systems have, educational leaders like other leaders require skills of planning "knowhow," the ability to forge partnerships, the ability to improve and maintain relationships within and outside schools, the ability to develop a "clear vision," excellent communication skills, and adaptability [8]. Weisman and Vaughan [10] identified a complementary list of important leadership skills, including the ability to mediate, a good command of technology, a high tolerance for ambiguity, understanding and appreciating multiculturalism, and an ability to build coalitions. The AACCC [1] identified the following essential leadership skills: understanding and implementing the community college mission; effective advocacy skills; administrative skills; community and economic development skills; and personal, interpersonal, and transformational skills. Further, Educational leaders must be models of integrity, honesty, and high ethical standards. They must be open to new ideas, and their judgments must be fair, dispassionate, and equitable. They must confront issues and people without prejudice. In particular, they must ensure that students are respected as individual learners and protected from disparagement, embarrassment, or capricious behavior. They must realize that retaining their popularity is not as important as doing what is right. To be successful in today's environment and that of the twenty first century, leaders must find ways to involve people in their decisions. They must be catalysts for finding ways to make things happen for the schools. They should encourage and support innovation and discovery [2]. Future leaders will be selected because of their demonstrated knowledge and skills. They will need opportunities to learn, to develop, and to practice these skills through simulations, internships, and mentorships.

Due to the gap between the actual fact of Arab educational systems and what is required for such system in the twenty first century, this research was

conducted to find out the features of TFCEL from the perspective of Arab educators through answering two questions:

Q1) What are the features of TFCEL from the perspective of Arab Educators?

Q2) What are the challenges that face TFCEL from the perspective of Arab Educators?

This research used the qualitative research approach which is based on conducting interviews with Arab Educators. The data collected from the interviews were analyzed qualitatively to examine the educators' views about the features of TFCEL and what challenges face it. Further, the population of this research is compromised from Arab educators who work temporary or permanently in Abu Dhabi. Educators were conveniently selected and interviewed. The convenience sample technique was used to select educators from schools, institutions and universities.

In a qualitative inquiry, sample size depends on what you want to know, the purpose of the inquiry, what is at stake, and what will be useful; so in-depth information from a small number of people can be very valuable, especially if the cases are information-rich. The research sample consisted of (20) educators, (7 males and 13 females).

The research adopted the interview as a basic research tool; the interview questions were designed and formatted, and then its validity was checked by interviewing three educators from outside the research sample. To get substantial information about the research questions, face-to-face interviews were conducted by the researcher with the educators. Each interview with each educator lasted for one hour in average.

2. Literature Review

Twenty First Century Education Leadership (TFCEL) is the education that was introduced in many countries during the last fifteen years. The TFCEL is a holistic set of principles, criteria and features that aim to improve the quality of every single component that affects the educational environment whether this component belong to human resources, equipments or infrastructures. TFCEL is based on speciality, vision, knowledge, skills, competencies, scientific research, flexibility, and open minds; it believes in change and technology and depends on the appreciation of others. Leadership draws others into the active pursuit of strategic goals. Leadership has been a subject of considerable debate and discussion for as long as people have worked in groups. Leadership is the process of communication (verbal & non-verbal) that involves coaching, motivating/inspiring, directing/ guiding, and supporting/counseling others [6].

It is related to vision, mission, purpose, direction, and inspiration and management to implementing plans, arranging resources, coordinating effort, and generally seeing that things get done [4]. Leadership for the Twenty-first Century is "an influence relationship among leaders and followers who intend real changes that reflect mutual purposes". "Both leaders and followers form one relationship that is leadership" [9].

Twenty first century leaders need to have an understanding of the social, political, and economic factors that shape and affect the educational system. Also, effective educational leaders are aware of the ideologies, political pressures, and shifting economic conditions. The ability to respond to diverse groups and pressures is also a characteristic of an effective educational leader. Effective leaders in the 21st century need to embrace values consistent with service and a demonstrated ethic of care towards others. Further, effective leaders can recognize the interdependence among all people, and they foster personal empowerment [5].

TFCEL has different levels; at the school level, where there are teachers and supervisors (field or site leadership), and leadership at the educational authority level (middle leadership), and top leadership. In each level, leaders need to hold the aspects, components, features, principles, vision, and competencies of a leader, they should be characterized with flexibility and open mindedness, believe in change and technology and appreciate others and other's opinions. This is to provide a high quality of education; as educational leaders are the key factors in educational improvement and change and they play a crucial role in the implementation of educational reform and school development [3]. TFCEL focuses on all aspect of the educational system, students, teachers, educational infrastructures, equipments, parents, communities, planning, counselling. It emphasises on the quality of everything that construct the educational system. TFCEL focuses on all aspect of the educational system, students, teachers, educational infrastructures, equipments, parents, communities, planning, counselling. It emphasises on the quality of everything that construct the educational system. The features of TFCEL is well recognized in the educational literature and are already implemented in many of the developed countries, nevertheless, in the developing countries, there is still a lack of understanding, valuing, and implementation efforts of these features. For this reason, this study was carried out to formulate the different aspects of educational leadership in twenty first century and the challenges facing it from the perspective of Arab educators.

3. Analysis of Findings

The findings of the interviews with Arab Educators are presented below according to the research questions, as follows:

Analysis of Findings of question one: What are the features of the Twenty First Century Education Leadership (TFCEL)?

Arab educators have different views of the twenty first century education leadership (TFCEL), interviews with twenty Arab educators showed that TFCEL has many features and aspects from their own perspective. It is the process of directing the talents and energies of teachers, pupils, and parents toward achieving the common educational aims. Education leaders need follow steps and procedures and this is through a certain process to reach and realize the aims of their organization. Arab educators emphasize that TFCEL is a process of change to build generations. One of the interviewees stated that:

Education leadership is the process in which changes can be made by us and create a new environment of teaching that will help us to build the new generation. We should implement the new model and strategy in teaching, and at the same time we will be the leaders of any changes taking place and avoid any mistakes that may have a negative impact on students performance; education leaders manage the teach and guide them to the proper way of teaching and keep them updated about the new teaching methods.

The TFCEL is a process by which a leader influences others to accomplish an object and directs the organization in a way that makes it more cohesive and coherent. Leaders carry out this process by applying their leadership attributes, such as vision, beliefs, values, ethics, character, knowledge, and skills. Leaders in this sense need to be well-educated and equipped with knowledge and skills in order to lead their organization in the right direction. It is essential for the twenty first century education leaders to be highly qualified and well-trained to realize and lead the aims of their organization. TFCEL is the leadership that holds vision, knowledge, skills and charisma. In this sense, one of the interviewees stated that:

Visionary leadership includes four different types of visions; organization, future, personal, and strategic. Organizational vision involves having a complete picture of a system's components as well as an understanding of their interrelationships. Future vision is a comprehensive picture of how an organization will work at some point in the future, including how it will be positioned in its

environment and how it will function internally. Personal vision includes the leader's personal aspirations for the organization and acts as the impetus for the leader's actions that will link organizational and future vision. Strategic vision involves connecting the reality of the present to the possibilities of the future (future vision) in a unique way (personal vision) that is appropriate for the organization and its leader.

TFCEL is the ability to plan, guide, inspire and manage organizations effectively toward a higher level of achievement of goals. Such skills need to be part of education leaders' preparation and training in the Arab countries. As the opportunity of improvement and development of the Arab educational systems depend on having leaders who are well-equipped with such skills and specialised knowledge in the area of education and leadership.

TFCEL is the ability to guide students to do what is most suitable for them and their society based on values and morals. Enabling young generation to do the right thing is not an easy job for educators or leaders, especially doing something based on the respect of the society culture and values while we live in the area of globalization and the lack of respect of culture and tradition. Thus, it is part of the TFCEL to hold the responsibility of guiding and advising learners to the right path in their lives.

TFCEL is the ability to lead educational institution comfortably and effectively in changing environments. Leadership becomes the capacity to generate and evaluate a continuously changing environment—to build feedback into environments in the process of continuous improvement. This is a crucial element of the TFCEL as the achievement of people, whether they are students or employees in schools or other educational organization depends on the level of comfort they experience in their work environment.

Another element of TFCEL is its connection with the local community. The relationship with the school community or parents is considered an important and active one in order to understand the different aspects of the educational process inside schools. This is to solve the students' problems as well as to improve their achievement. In this sense, TFCEL need to establish positive relationships with their communities to gain the fruits of success for themselves and for their organization. Further, TFCEL needs to have the knowledge and skills that guarantee a high level of safety and security in the educational environment for students, educators and other employees. This includes the social, emotional, psychological, and materialistic environment. Ensuring the safety of the environment leads students and educators to work towards their aims and goals with their highest utmost.

TFCEL needs to be familiar with the society culture, traditions, customs and habits. This enables such leadership to plan, act and improve the quality of the services that are delivered to the students or to the society as well meet their needs. Further, TFCEL needs to have a strong moral purposes and commitment to its work and society to help all schools improve performance. This is essential to move Arab societies from its current poor condition to a better one and this is mainly the duty of leaders in general and educational leaders in specific. Moreover, TFCEL needs to acquire professional skills that enable them to change and introduce creative ideas and innovations. The previous and even some present education leadership follow traditional practices and have limited knowledge and experiences. TFCEL needs to have a good sense of humor, appreciation and gratitude for every effort, to know weaknesses and strengths through personal reflection and awareness, to own good listening skills that reflect a better understanding to work details. Also, TFCEL needs to be fearless and courageous all grounded in self-identity, accessible and fair. This should be given much more focus as it noticed that present education leadership in most Arab countries is not accessible and has limited skills, vision and experience. In this sense, one of the major features of the TFCEL is to build confidence, empower and motivate employees and community members to achieve the for-stated goals. Further, TFCEL has to acquire the knowledge and competencies of using new technology in the educational field. This is a result of the nature of our time which is based upon computer, internet, and advanced technology. This means that there is no chance for education systems to move ahead without professional leaders in different fields, especially the field of technology. One of the interviewees stated that:

I think the twenty first century educational leadership is the one which provides each educational leader like schools` principal or teachers with the sufficient and useful techniques; especially in this rapid and changeable world's technology which help them to narrow the gap related to this world and acquire the skills necessary to function in the information society. The twenty first century educational leadership explores recent ways to prepare future citizens for lifelong learning, to develop teacher skills in regard to using technology and integrating it into classrooms practices, and also to change students into productive knowledge workers.

Analysis of Findings of question two: what are the challenges that face twenty first century education leadership (TFCEL)?

The challenges that face TFCEL are varied; the challenge of preparing and educating education leaders is a crucial one. In most Arab countries there are no special or specialized training programs or courses that prepare leaders. Usually, educational leaders come to leadership positions by experience, the number of years in service. And in other cases, they come to leadership positions because of their social and family connections. This leads TFCEL to face another challenge which is the lack of institutional work. The institutional work is the work that is performed according to rules and systems not according to personal relations.

TFCEL is also challenged with the lack of resources, specialized and high qualified human resources that lead and inspire followers, whether those follower are students, teacher, or principals. Further, the lack of financial resources that may be available for educational leaders, who are left with a wide range of priorities that need to be accomplished, is another challenge facing TFCEL. Thus, education leaders become unable to make any changes, or to improve and develop the educational system on the micro-or macro-level. Another challenge that faces TFCEL is the lack of trust and communication among those who lead the educational system. This is the case between teachers and principals, supervisors and teachers, educational authority and schools, and parents and schools. This is referred to the lack of communication between all parties.

The traditional and old-fashioned educational leaders who still hold the responsibility of leading Arab educational system at all levels are still stuck to old believes that mislead a whole community, for example; Arab teachers still focus on memorization as the only way to gain knowledge and this is supported by parents and by the top management. This is due to the lack of organizational work that creates new leaders who believe in change and new teaching methods. In this sense, one of the interviewees stated that:

There is a lack of understanding to the nature of students nowadays who are much different in certain aspects from those of past years, where there was no modern technology. Most children are raised these days in a technological world and are more knowledgeable, and must be educated differently, due to the large amount of information exposed to them and from many different resources, due to the open or global environment.

Another challenge is the creation of vision to the educational system, which, for many reasons, is not reached. Many plans and projects announced the vision of educational systems, but there is no implementation or stability in these plans. Changes and modification over these plans are going around

all the time. This is referred to the fact the people who lead is not familiar or not in relation with education. Further, this is due to the lack of support and understanding to the necessity of the educational change.

4. Contribution to Knowledge

The contribution of this research to the general knowledge has been realised by its examination of two important, indeed fundamental themes in educational leadership in a practical setting. This study also, contributes substantial information about the specific development as it is a new research area in the Arab Region, and it is the first from its kind that deals with the Twenty first century education leadership and the challenges facing it. Also, it is the first one of its kind that deals with the educators from all levels; teachers, supervisors, principals, instructors and professors. Further, it is expectable for the findings of the research to be valuable for many ministries and organizations in the Arab Countries if they adopt the research recommendations. Finally, it uses the qualitative research methodology, which gives details of accurate and objective information on the subject and the dimensions of the research.

5. Conclusions

The research concludes that:

- TFCEL is the process of enlisting the talents and energies of teachers, pupils, and parents toward achieving common educational aims.
- The TFCEL is a process by which a leader influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent.
- TFCEL is the ability to guide students to do what is most suitable for them and for their society based on values and morals.
- TFCEL needs to be familiar with the society culture, traditions, customs and habits. This enables such leadership to plan, act and improve the quality of services that delivered to students or to society.
- TFCEL needs to acquire professional skills that enable leaders to change and introduce creative ideas and innovations.
- TFCEL is challenged by the lack of specialized training programs or courses that prepare leaders. Usually educational leaders come to leadership positions by experience or the number of years in service.
- TFEEL faces the lack of institutional work in which people work according to rules and systems not according to personal relations.

6. Recommendations

In light of the findings of this research, the research recommends the following:

- There is a need to establish advanced training courses and workshops to prepare educational leaders.
- There is a need to create a stable vision for educational system.
- It is urgent to establish trust and communication channels among educators at all levels.
- There is a need to give young educators the opportunity to lead educational system.
- Selection and appointment of educational leaders should be based merit and qualifications at all levels.

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**Session 2A: Cross-disciplinary areas of Education,
Language Education, Art Education, Musical
Education, Reading Education**

IMPROMPTUTORING: Contriving Art-Inspired Improvisations into a Novel Lexical Task-Based Teaching Method (Alireza Ameri)

Developmental Hierarchy of Arabic Phonological Awareness Skills
(Sana Tibi)

Resiliency among Secondary school students: Assessment of the Measurement Model
(Azlina A.M., Shahrir Jamaluddin)

Language Teacher Education: Polycultural Competence Development
(Liudmila Khaliapina)

Learning Generators: Neuro-Linguistic Programming and Learning Styles In English Text Books
(Eva Zanuy Pascual)

Investigating the validity of language proficiency and lexical richness measures
(Majid Fatahipour)

IMPROMPTUTORING: Contriving Art-Inspired Improvisations into a Novel Lexical Task-Based Teaching Method

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Abstract

Impromptutoring is a humble coinage for improvised pedagogy: The use of extemporaneous unplanned or less planned teaching in the context of edutainment to render ELT as an art, and not just a methodic configuration. This research aspires to enframe disciplined improvisation into a novel TBLT. Its rationale lies in the fact that improvisation is used in various terrains of art, and so it has to do with performance, of which teaching is a legitimate subcategory. Lesson plans in real classes are frequently digressed, and the shackles of syllabi are loosened as classroom encounters are performed ad lib. The present study is a composite of qualitative-quantitative inquiry, mainly through interaction analysis, observation, stimulated recall, interview, and questionnaire to explore the mechanism of improvised teaching of the English lexicon through flexible tasks of vocabulary designed by the researcher alongside inquiring stakeholders' attitudes in hopes of affecting the status quo ELT education.

1. Introduction

Rumor has it that God's creation of Adam was planned, but the creation of Eve was an improvisation. Yet, she more affects the course of the universe! To further the pedagogical "quest for quality" and to do away with the linearity and predictability of class routines, EFL teachers may wish to resort to more natural spontaneous techniques and thereby reduce the chances of tedium in the class ambience. Skillful teaching is more than merely good lesson planning [8]. One needs to make teaching his/her own vintage and trademark; he/she is not to regurgitate what others have prescribed for him/her. Metaphorically speaking, each teacher is a chef to their own recipe. Improvisation is total spontaneity by teachers as well as learners with mixed feelings and opinions who are guided to construct their own text. Formal education has bred deficient graduates. They know the content, but they have problems socializing. They cannot do without plans; they look clumsy in ad lib situations. Curriculum, by the same token, is bitterly virtual and

off-line. "Success or failure in a language course depends less on pedagogical techniques than on what goes on inside and between the people in the classroom [7]. This alone provides room for improvisation. Furthermore, there is a tinge of potential affiliation between the concept of improvisation and each of the theories of Emergentism, Connectionism, Chaos/Complexity, Creative Teaching, Transformative learning, Incidental Learning, Shaping of Knowledge (Plasticity of Learning), Hidden Curriculum, Pedagogy of *being*, not having, etc.

2. Definition

"Impromptutoring" is the researcher's own portmanteau neologism of the words *impromptu* and *tutoring* thus coined to denote this new methodology; i.e. improvised teaching. The "ing" is there to symbolize perpetuity and dynamicity of improvisational activity. The researcher himself defines *impromptutoring* as any creative composition of external impositions and internal suppositions *ex mero motu* (out of mere impulse or of one's own accord) in the form of an unprepared preparedness with effortless effort via a textless text in online class: local addenda within global agenda. In short, *impromptutoring* is teaching between the lines.

3. Significance of the study

As far as the past literature allows us to know, no survey has by now been conducted to offer improvised teaching in the form of a flexibly designed method, especially with a lexical orientation. The area was public enough to give the researcher the impetus to venture an investigation. Therefore, the main objective of the present paper is to investigate the effect of improvised teaching as compared to scripted teaching, to call for the inclusion of improvised teaching into the syllabi and the teacher education programs, to enhance creativity in teachers, and above all to curricularize lexical *impromptutoring* into a teachable framework. The main objective of this study is twofold: first, to offer a symbiosis between art and education, and

introduce improvisation as quintessential in teaching languages, and second, to teach English lexicon through improvisational tasks.

4. Research questions

In this paper the following questions were proposed:

- In what forms does improvisation function in teaching English lexicon?
- What is the attitude of students towards improvised teaching?
- What is the attitude of students towards teaching vocabulary through improvised tasks?
- What is the attitude of teachers towards improvised teaching?
- What is the attitude of teachers towards teaching vocabulary via improvised tasks?
- Is there a correlation between teacher attitude and student attitude in the face of improvised teaching?
- Is there a statistically significant difference between male and female teachers' attitudes towards improvised teaching?
- Is there a statistically significant difference between male and female students' attitudes towards improvised teaching?
- Does impromptutoring have any effect on students' achievement of English vocabulary?
- Does improvised teaching of vocabulary increase interaction among class participants?

5. Methodology and Instrumentation

Initially, the extra-ELT literature regarding improvisation is explored through library and interview and interdisciplinary commonalities are explored, then intra-ELT interviews and attitude questionnaires are examined as for their raw material for contrivance of tasks to be conducted in an experimental class of participants whose results will be weighed, through lexical pre-and-post-tests, against those of a non-treated class to arrive at conclusions and implications for or against impromptutoring. As for the qualitative phase, interaction analysis is carried out to come by the modus operandi of improvised acts in the classroom procedures amidst observations. A piloting phase was also carried out in 5 sessions to better illumine the landscape of the research prior to the main phase.

- Interaction Analysis (N=15)
- Interview (N = 50 [25 non-ELT p + 25 ELT p]) (10 non-ELT q + 15 ELT q)
- Attitude Questionnaire (N=350 [50 teachers + =300 students]) (35 t + 20 s)
- Non-participant (*etic*) Observation and Field Notes (N=15) (35) (x2)

- Stimulated Recall (Introspective Measure/Self-observation) (N=15)
- Video-recording (N=5)
- Audio-recording (N=15)
- T-Test (40 subject group + 40 control group).

After all multiple data are gathered, the researcher embarks on designing lexical tasks of improvisation into a coherent teaching method to be implemented in the experimental phase of the study which will take 12 sessions, each averagely incorporating 3 tasks, altogether totaling 36 tasks of different nature, to a group of 40 learners treated through impromptutoring. To arrive at a statistically significant difference between achievement rates of improvisationally treated classroom and a non-treated control class, a t-test is carried out to prove whether the treatment has been successful or abortive.

6. Conclusion

An innovative approach comfortably viable in a classroom setting is improvised ELT. Improvisation has a long history in fields other than pedagogy such as performing arts. But it yields propensities that are adaptable by an artful teacher.

7. References

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Developmental Hierarchy of Arabic Phonological Awareness Skills

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Abstract

Research indicates a strong relationship between phonological awareness and reading success. This study examined a developmental hierarchy of four Arabic phonological awareness tasks. The participants were 240 native Arabic speaking students from elementary grades one to three. One-way ANOVA and multiple comparisons were used to analyze the data of the study. Results of this study indicated that the four phonological awareness tasks ranged from easy to difficult in the following; rhyme, initial sound identification, syllable deletion and phoneme segmentation. Significant differences were found in two tasks, identifying the initial sound of the word in favour of grade two and syllable deletion in favour of grade three. However, there were no significant differences in the grade performances regarding the rhyme oddity task and the phoneme segmentation task. This study supports English language research in the sense that there is a hierarchical order behind phonological awareness development. This means that when phonological awareness tasks are trained, they must follow an order.

1. Introduction

Considerable research in the past two decades has emphasized the importance of phonological awareness (PA) and phonics in the process of learning to read and write [5], [10], [13], [22], [24], [25]. Phonological awareness (PA) refers to the ability to recognize and make use of the phonological structure underlying spoken language. A large body of research has documented the importance of phonological awareness as an excellent predictor of reading success. Correlation studies, longitudinal studies and intervention studies have not only confirmed the importance of PA in learning an alphabetic script, but also clarified it and extended it.

In fact, researchers now recognize the major difference between successful readers and struggling readers on phonological awareness tasks. Many researchers consider PA a prerequisite for learning to read. Several researchers have developed tests to assess PA skills for readers as well as pre-readers.

The result of research indicates that low-readiness pre-readers are simply unable to think consciously about the sound structure of words. Unlike high-readiness pre-readers, low-readiness pre-readers do not attend to the phonemes of words spoken. Phonological awareness has been also a component in many reading intervention and instruction programs. Many phonics programs have focused on their PA skills. Phonics, in its simplest sense, refers to a system of teaching reading that teaches the sounds of the alphabetic script. Phonics is an instructional strategy that focuses on teaching correspondences between letters and their corresponding sounds. An ample body of research has proven that implementing systematic phonics instruction has positive impact on children's reading [2], [16]. In fact, Ehri et al. [9] recommended that phonics should be part of literacy programs to teach beginning readers as well as to prevent and remediate reading difficulties. Comprehension, the ultimate goal of all reading instruction programs, cannot be achieved if a child is not taught to recognize letters, map letters on to their sounds, spelling patterns and also to recognize some whole words [2].

Research [2], [9] proves that skilful readers do translate spellings to sounds as they read. Although, skilful readers seem to recognize familiar words visually, skilful readers visually process every individual letter of every word as they read [2]. This is evident when skilful readers detect sometimes the slightest misprint that may appear in a long word or a text. In addition, skilful readers use context to speed the interpretation of orthographic information only after the word is identified. The context does not take the place of orthographic information. Therefore, skilful readers possess knowledge of word's pronunciation. Spelling-sound associations serve as a backup system for recognizing visually less familiar words. Indeed, research clearly indicates the importance of the phonological processor in this process of reading the alphabetic script. Observations of everyday reading behaviour of beginning readers clearly reveal this sounding out behaviour in both reading and writing attempts. Therefore, activating the phonological processor plays a critical role in the process of learning to read [8]. Indeed, Bryant et al. [4] stated that "the

discovery of a strong relationship between children's phonological awareness and their progress in learning to read is one of the great successes of modern psychology".

Children's conscious appreciation of syllables and later on of individual phonemes is strongly related to reading acquisition. Children's knowledge of letters and letters' sounds is a crucial matter for reading acquisition. In fact, understanding and using the alphabetic principle depends equally on knowledge of letters and explicit awareness of the phonemes these letters represent. Adams stated that "knowledge of letters and phonological awareness have been found to bear a strong and direct relationship to success and ease of reading acquisition" [2].

Phonological awareness is not acquired spontaneously. It seems to develop only through systematic and explicit training. Teaching phonological awareness requires considerable time and effort. Phonological awareness skills (phonemes and syllables) when taught result in significant gains in reading for most children. In fact, several studies reported that children who received phonological awareness instruction had higher scores on measures of reading achievement than children who did not receive instruction in phonological awareness [3], [7], [14], [19]. Cunningham [7] has noted that kindergarten children with explicit instruction in phonological awareness did better than a group of first graders who had no instruction on PA skills, indicating that this important pre-skill for reading can be taught.

Phonological awareness tasks vary in type and difficulty. Several of these tasks have been addressed in the literature in the English language over the past 20 years. Some tasks are at the syllable and intra-syllabic levels, while others are at the phoneme level. Some examples of phonological awareness tasks include: phoneme segmentation, syllable segmentation, phoneme manipulation, rhyme generation, odd word out, phoneme synthesis, syllable blending and deleting sounds [3], [6], [7], [25]. Also, diversity in the phonological awareness tasks is of importance because of its developmental progression. The developmental nature of phonological awareness skills has implications for both assessment and intervention. Some tasks are easier than others; hence develop earlier [23]; [25] Assessment results of phonological awareness show that some tasks are beyond the ability of children for a certain age group. For example, phoneme manipulation tests have been found to be beyond the ability of children before the end of first grade [11]. On the other hand, initial sound recognition test or as Adams named it syllable-splitting test is considered easier than phoneme segmentation or manipulation tests [2]. Other phonological tasks such as phoneme segmentation are more difficult because they require

the child to know every little sound in a word in isolation. This ability usually comes as a result of learning to read and when the child has already acquired larger units (e.g. Syllables and words). Hence, the better children are at decoding, the better they do on the phoneme tapping or phoneme segmentation tests [2], [21]. Children seem to do better with larger units of sounds (syllables) than with smaller units of sounds (phonemes) [18], [20]. The difficulty of phonological awareness tasks has implications for instructional strategies. Thus, teachers should engage students initially in activities that focus on larger units such as syllables and sub-syllabic unit the onset and rime. Research literature on the English language has addressed the issue of the different types of phonological awareness tasks and the variations in the difficulty of these tasks. Several researchers also added that the number of sounds in a word is a factor in the difficulty of the task [2], [17], [25], [26]. For example, it was noted in [26] that matching initial sounds is an easy task whereas segmenting spoken words into their constituent sounds is more difficult. That is, fewer sounds are easier than more sounds. In addition, the location of the sound in the word (initial, medial, final) makes a task easier or more difficult than the other. For example, asking the child to identify the initial or final sound is easier than the middle sound [12].

The purpose of the present study is to examine the nature of some phonological awareness tasks in the Arabic language. The study presented here aims at discovering the level of difficulty of four Arabic phonological awareness tasks. Findings from this study can provide information about the acquisition of phonological awareness in Arabic and hence has instructional implications.

2. Method

2.1. Participants

The participants in the study were 240 (male & female) from the first three elementary grades; one (n=58), two (n=52), and three (n=32). The sample was selected from a number of elementary grade classes in Al-Ain city of United Arab Emirates (UAE). The three classes were selected randomly for each grade level. These schools were public schools from the city of Al-Ain in the Emirate of Abu Dhabi.

2.2. Materials

The tool of the study consisted of four phonological awareness tasks that were presented orally. The four tasks were developed for the present study. The tasks varied in nature and degree of difficulty. The four tasks included in the present study were: identifying the initial sound in a word,

rhyme oddity, syllable deletion and phoneme segmentation of words. Each of the four tasks included ten items. The words in each task were selected from the Standard Arabic language curriculum in the UAE. The language used in these texts is the Modern Standard Arabic (MSA) as opposed to spoken Arabic. The four phonological awareness tasks were selected after a review of phonological awareness tasks in English. In addition, the items in the four tasks were selected based on what is appropriate for the Arabic word syllabic structures and what is common [2].

2.3. Initial sound identification

In this task, the examiner presented a word orally and asked the child to say the initial sound of the word. For example, “What sound does the word /samak/ (fish) begin with?” The child had to say the sound /s/. In this task, each correct response received one point. The maximum score for this measure was ten points.

2.4. Rhyme Oddity

In this task, the examiner orally introduced a set of three words. Two words are similar in prime but one word is different in rhyme. For example, the examiner asked the child which word is different in rhyme when I say /da:r/, /na:r/, /samak/. The child had to say the word /samak/ because the rime is different. This measure received one point for each correct answer. The maximum score for this measure was ten.

2.5. Syllable Deletion

In this task, the examiner orally presented a word to the child and instructed him/her to provide a new word after deleting one syllable provided by the examiner. For example, the examiner said which word do you get out of /jama:l/ (beauty) when we delete the syllable “ja-”. The child had to say the word /ma:l/ (money). Each correct answer the child produced received one point Maximum20.

2.6. Phoneme segmentation

In this task, the examiner orally presented the stimuli to the child and instructed the child to segment the word into its constituent phonemes. It should be noted that Arabic and English are quite different orthographically and in the relationship between the orthographic system and the sounds in the spoken language. Phoneme segmentation is a task that requires special consideration especially when administering it to young children. Therefore, the examiner included practice items with feedback followed by ten items. The performance on the

practice items was not included in the sub-tests score. For example, in this segmentation sub-test the examiner presented a word by asking “How can we divide the word /samak/ (fish)?” The child had to respond by saying all the consonants and the short vowels that the word included in the past. Each correct answer the child provided received one point summing up to a total of ten points.

To investigate the reliability of the tool, it was administered to a pilot of 20 students and then re-administered after two weeks. The correlation coefficient was .85. To determine the validity of the tool, a number of methods were used. The tasks and their items were designed after reviewing the Arabic language curriculum in order to choose familiar words from Arabic curricular texts. In addition, the tasks were designed based on a review of literature on phonological awareness at the word, syllable, and phoneme levels. The tool was designed in its preliminary form and then it was sent for evaluation to three reviewers and five senior teachers in order to evaluate the relevancy of items to the students’ curricula. Their comments were taken into consideration and modifications were made accordingly. To finalize the tool, it was given to three faculty members at the College of Education, UAEU. Their comments regarding the language of the items were incorporated into the final tool. The tests were administered to each student individually and lasted approximately 45 minutes.

3. Results and discussions

One-way ANOVA and multiple comparisons were used to analyze the data of the study. Table 2 presents means and standard deviation for the four PA tasks for each grade. When comparing students’ performance on the task of identifying the initial sound in a word, grade two children had significantly a higher mean score (mean = 8.90) than grade one children (mean = 7.7) as can be seen in Table 2. This result may be due to the fact that by the time Arabic speaking students reach second and third grades, they have already acquired the necessary knowledge related to the alphabetic principle and auditory discrimination skills which in turn enable them to identify the first sound in a word.

In the rhyme oddity task, there were no significant differences among the means for the three grades. This may be due to the fact that rhyme tasks are considered easy and therefore mastered early [2], [26]. The fact that the rhyme oddity task implemented in the present study turned out to be the easiest may be due to the fact that the final phoneme is easier to isolate than initial phoneme. In fact, in another research on Arabic phonemic awareness, it was reported that initial phonemes were harder to isolate than final phonemes [15]. In addition, Arabic students’ early exposure to Quranic texts stimulates

their awareness of rhyme and alliteration. Quranic verses have a high percentage of rhyme that facilitates memorization and recitation of Quran even if one does not speak the Arabic language.

In the syllable deletion task, the mean score for students in grade three was significantly higher (mean = 8.58) than for grade one students (7.03) as seen in Table 2. This may be due to the difficulty of the task. That is, deleting a syllable and producing a new meaningful word with a different meaning from the original word requires higher language skills when dealing with the form and content of the word. Also, syllable deletion is a higher order of phonological awareness and more sophisticated than simple tasks such as rhyme or initial sound identification.

As for the phoneme segmentation task, means were almost the same across all three grades. This may be due to the fact that isolating each sound as a discrete sound is more difficult than analyzing words into syllables. It has been shown in the English literature that syllable analysis is easier than phoneme analysis and hence develops earlier. Awareness of phonemes, although the most closely PA task tied to decoding skills, seems to come only after a child is aware of larger units. Also, with phoneme segmentation tests, it is possible that the ability to tap the number of phonemes is a result of learning to read, as well as a possible cause [2], [26]. Furthermore, one may argue that dealing with larger units in Arabic would be easier than dealing with smaller units because Arabic is considered a syllabic language. Therefore, it would be easier for Arabic speaking children to break an Arabic word into syllables rather than single phonemes.

The results of this study revealed that phonological awareness skills in Arabic seem to follow a developmental hierarchy. This finding is congruent with other findings from the literature on the development of phonological awareness in English speaking children. There seems to be a hierarchical organization in the rate of acquisition of the different types of phonological awareness skills in Arabic.

The results indicated that some phonological awareness tasks are easier than others. Identifying the initial sound of a word and rhyme oddity tasks are easy tasks when compared to syllable deletion and phoneme segmentation. This finding as indicated earlier is consistent with other findings from the literature on the English language [2], [22], [25]. This study revealed that the hierarchical order of the Arabic phonological skills investigated here ranked from easy to most difficult as follows: identifying initial sound, rhyme oddity, syllable deletion and lastly the phoneme segmentation task.

Another important finding is that the phoneme segmentation task in Arabic is the most difficult one. This finding is consistent with previous findings in

English. Larger units (e.g. syllables) are acquired faster than small units [5]. Also, it seems the case that Arabic children do better in phonological skills related to larger units than phonological skills related to smaller units. This finding may be due to the strong cohesion found in Arabic between the initial consonant and its following vowel [15].

4. Conclusion

This study tested four phonological awareness tasks in Modern Standard Arabic. A total of 240 children were randomly selected from public first, second and third elementary classes from Al Ain city in the Emirate of Abu Dhabi in the United Arab Emirates. The primary aim of the study was to examine the developmental nature of some phonological awareness tasks in Modern Standard Arabic. The results showed that there was a developmental progression across all three grade-level groups on all four PA tasks. Further, it was shown that the four PA tasks selected for the present study varied in their degree of difficulty. For example, the rhyme oddity task was the easiest among all four tasks examined for the purpose of this study. This result conforms to the fact that larger syllables are easier than single phonemes especially in the case of Arabic [15]. Adams [2] has theorized that phonological awareness tasks in the English language may be classified according to levels of difficulty with the easiest being tasks that measure the ability to remember familiar rhyming words followed by the ability to recognize and classify patterns of rhyme and alliteration which is exactly what the rhyme oddity task, selected for the present study, required students to do.

Adams [2] stated also that full segmentation of all the phonemes within words is a fourth level of analysis, followed by phoneme addition, reversal, deletion and other manipulation processes. Results of the present study also showed that the phoneme segmentation task proved to be the most difficult task and, therefore, developed at a higher grade level. This finding confirms earlier findings by Saiegh-Haddad [15] which stated "Arab children find initial phonemes and initial singleton phonemes the most difficult to segment". Overall, this study supports previous claims that there is a hierarchical order to the development of phonological awareness in spite of differences in language structures.

Nevertheless, one should note here that this study involved only school-aged children who are already exposed to formal instruction in reading. This means that children's performances across all grade levels on the PA tasks in this study may have been influenced by their formal exposure to the orthographic structure of the language. Future research that includes a younger age group

(preschoolers) is suggested to examine closely the nature of their performance on PA tasks prior to their school-based knowledge of orthography.

Findings of the current study have important practical implications for both assessment and instruction. That is, when practitioners or assessors develop assessment tools, they need to ensure that there is a variety of PA subtests (phoneme and syllable levels); that they provide varied degrees of test difficulty; and that they are able to administer the test to different age groups. As for instructional implications, teachers need to be sensitive to the level of difficulty of the PA tasks to be taught. Teachers must be knowledgeable about the graded level of difficulty of PA tasks. For example, teachers need to know which PA tasks will be more suitable to teach to younger children. For these children, PA tasks that deal with rhyme and initial sound identification will be more suitable to teach than other PA tasks that require manipulation of the sounds in memory.

Future research should further examine the developmental progression of other PA tasks and include younger children who have not been exposed to formal literacy instruction. In addition, the role of the Consonant-Vowel (CV) unit in segmenting Modern Standard Arabic words into phonemes should be further examined. Moreover, students' performances on other PA tasks could be compared to their reading of single words and spelling as well examining closely the relationship between PA and other reading and reading-related measures. Further research on the nature of reading processes in the Arabic language is warranted.

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Resiliency among Secondary School Students: Assessment of the Measurement Model

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Abstract

Some adolescents could successfully adapt with exposed risks and they are identified as resilient. Resiliency is related to the individual quality or strength that increases his/her ability to withstand adversity [8]. A resilient person has also been described as one who commonly displays social competence, problem solving skills, optimism, invulnerability and person-environment fit [4];[10]. This paper makes an attempt to test empirically the measurement/CFA model of adolescent resiliency using structural equation modeling (SEM). The adolescents' conceptions of resiliency measured such dimensions as active skills, future orientation, risk taking and independence. This study was done based on a total sample of 308 secondary school students from east-coast of peninsular Malaysia. Cross-validation was done using two sub-samples of 160 and 148 students. The Resiliency Belief Scales (Mrazek & Mrazek, 1987) which was adapted from [19], was used in this study. The instrument consisted of 45 items and the items were hypothesized a priori to have non-zero loadings on all dimensions in the model. Analysis of the items resulted in a well-fitting model ($\chi^2 = 1.327$; $df = 1$; $GFI = .998$; $CFI = .996$; $RMSEA = .03$).

(Keywords: education, resiliency, adolescence)

1. Introduction

Resilience in recent years has been the focus of an increasing number of books, articles and research in the human survival, service and including the field social work. Resiliency is defined variously by researchers and theorists. Resiliency finds its theoretical and empirical roots in the developmental psychopathology literature on vulnerability to stress [6]. Resilience is the capacity for and outcome of

adjustment in spite of challenging or threatening circumstances. Therefore, resilience is the positive pole of the vulnerability-resilience continuum. The concept of resilience that grew out of risk research refers to successful adaptation despite the odds against good development.

The field of resilience has evolved since the early studies by researchers [15] and [20]. The research focused primarily on identifying intrinsic and extrinsic factors that would either protect or put a child at risk of developing negative outcomes after experiencing difficulties [18]. Resilience also refers to sustained competent functioning despite severely challenging circumstances [6]. Thus, resilience implies effective coping, which including thought and action as the person puts effort to restore or maintain equilibrium under certain threat.

Richardson et.al, 1990 (as cited in [6]. formulated the resiliency model in which they denote competency and resiliency as strengths. They define resiliency as "the process of coping with disruptive, stressful or challenging life events in a way that provides the individual with additional protection and coping skills than prior to the disruption that results from the event". In the resiliency model, resiliency is not a state-trait characteristic, but a response to stimuli. As stress-resistance, resilience is thought to be related to cognitive appraisals of life stressors and the range of problem-solving skills available to individuals. As recovery, resilience is the capacity to recover from traumatic events as the threat recedes in intensity over time [6].

Continued future studies on resiliency are important because review of previous research literatures found that resiliency correlates positively to academic achievement [16], religiosity [13], self-efficacy [8]; [9]), school attachment [13], self-improvement [11] and well-being [7].

Emerging research in resiliency has established that predictable and malleable characteristics of certain high risk students appear to support their

educational and personal success despite very difficult life circumstances [18]. Resiliency should be established among students because it can protect them against health risk behaviors such as suicide ideation or attempts [13]. This study focused on adolescents because as individuals age from childhood to adulthood, they pass through a critical period during which the characteristics of maturity, cognitive skills, coping skills and relationships develop. The myriad changes involve emotional and social stress. According to Resnick, Harrick and Blum (1993) [14], the major health risks facing the estimated 34 million adolescents in the U.S. today are traceable to psychosocial, behavioral and economic factors [13]. In 2006, Malaysian government has approved additional expenses of RM6.1 million per year to handle social problems, especially among adolescents [12].

Literature reviews have given more emphasis on risk factors compared to factors that contribute strengths [3]. By focusing on strength or resiliency, we can recognize the potential each individual has. Furthermore, resiliency can function as innate drives to achieve self-actualization, increased motivational energy to grow, potential buffer to stress, capacity to bounce back, recover from adversity and sustainable development among adolescents.

In order to conduct empirically fruitful future research involving resiliency, we need a psychometrically sound measure of resiliency scales. The Resiliency Belief Scale, developed as a general measure of the subjective quality of life, is a widely used 45-item self-report measure of resiliency. This scale is based on Mrazek & Mrazek 1987 (as cited in [19]). Conceptualization of Resiliency Belief Scales is based on three aspects; active skills, future orientation, risk taking and independence.

Previous studies investigating psychometric features of Resiliency Belief Scale involved English speaking samples. Local data pertaining reliability, validity and factor structure of Resiliency Belief Scale (RBS) are lacking. Therefore, the present study attempted to evaluate the Resiliency Belief Scale involving Malaysian samples. Specifically, this study addressed the following questions:

- a) Is RBS an internally consistent measure of resiliency ?
- b) Is RBS a valid measure of resiliency ?
- c) Do all items load significantly to the three factors ?
- d) Is RBS is a well-fitted model in Malaysian context ?

2. Sample

The first group of participant involved 160 students were randomly selected from secondary schools from form four in east coast of peninsular Malaysia. Approved letter from Ministry of

Education and State Department of Education were attached with the questionnaire. The questionnaire was group administered to the students during their regular class hours with permission from their school principals and teachers. The participants were given brief description of the research project and the process of informed consent was done.

To further validate the well-fitted measurement model, a total of 148 students from secondary schools were randomly selected for this study. The same data collection procedures were employed. It took about two months to collect the data.. Therefore, the total participants in this study were 308 representing 45% male and 55% female participants. All of them were 16 years old.

3. Instrument

Resiliency Belief Scale is based on Mrazek & Mrazek, 1987 and developed by Jew, 1997 (as cited in Trammel, 2003). Conceptualization of Resiliency Scales is based on three factors; active skills, future orientation, risk taking and independence. The active skills focus on the skills needed to be resilient such as rapid responsiveness to danger in order to avoid harm, information seeking and cognitive restructuring of painful events. Future orientation is related to the conviction of being loved, optimism, altruism, formation of relationship for survival, positive projective anticipation and hope. Risk taking and independence are related to ability of the adolescents to take risk or decisive risk taking, confident, competence and independent. Each subscale consists of 15 items. Back to back translation was done and was referred to two experts in English and Malay languages.

The instrument was based on a cognitive appraisal theory of resiliency first posed by Mrazek & Mrazek, 1987. Their theory posited that responses to stress are influenced by appraisal of the situation and the capacity to incorporate the experience into one's belief system. Promotion of resiliency lies in encountering stress at a time and in a way that allows individual to experience appropriate responsibility, thus increasing sense of self-confidence and competence. Resilient persons cope with stress because they use certain skills and abilities to recover from adversity.

The students were required to indicate their beliefs and conceptions of the resiliency assessment of RBS on a six-point response scale (Strongly Agree, Moderately Agree, Agree, Disagree, Moderately Disagree and Strongly Disagree). Each statement was worded in a manner to capture the meaning attached to one of the three dimensions.

4. Data Analysis

The main task in this model testing procedure is to determine the goodness of fit between the hypothesized model and the sample data. To arrive at the conclusion, a confirmatory factor analysis (CFA) was conducted on the hypothesized three-factor structure model using Analysis of Moment Structure (AMOS) version 7. Assessment of the measurement model involved confirmatory factor analysis (CFA) [5]. CFA assessed the reliability and validity of the individual items and the overall measurement model. The program adopted maximum likelihood estimation to generate estimates in the measurement model.

To assess for the reliability of the instrument in this study the researcher makes use of estimates of internal consistency (Cronbach's alpha). Cronbach's alpha is a commonly used measure testing the extent to which multiple indicators for a latent variable belong together. A general rule is that the indicators should have a Cronbach's alpha of 0.70 or more [17]. Further confirmation of the overall fit of the measurement model using CFA is obtained from the Maximum Likelihood estimation Chi-Square (χ^2) statistics produced by AMOS and various other goodness-of-fit criteria. Byrne (2001) suggested the goodness of fit indexes are the chi-square (χ^2), the smaller the chi square, the better and p value greater than .05, Goodness of Fit Index (GFI) and Comparative Fit Index (CFI) are greater than .90 and the absolute fit of the model, Root Mean Square Error of Approximation (RMSEA) is below .08. Subsequently the final fitted measurement model was further validated.

5. Results

The validity and reliability of the instrument reported here are based on the data collected from this study. The strategy employed in the present study to test the validity and the reliability of the instrument focuses on the psychometric properties of the scales used. In this aspect the researcher makes use of estimates of internal consistency (Cronbach's alpha) and confirmatory factor analysis (CFA).

Table 1 shows the internal consistency (Cronbach's alpha) above the satisfactory value of .70 [1]. Table 2 shows the regression weights of the model and Table 3 shows the goodness of fit indexes of confirmatory factor analysis (CFA) for the measurement model of adolescents resiliency by using Resiliency Belief Scale.

Table 1: *Internal Consistency of the Instrument (Cronbach's alpha)*

<i>Factors in RBS</i>	<i>Cronbach's alpha value</i>
Active skills	.91
Future orientation	.93
Risk taking and independence	.93
Total instrument	.93

Table 2: *Regression Weights: (Group number 1 - Default model)*

	<i>Estimate</i>	<i>S.E.</i>	<i>C.R.</i>	<i>P</i>
par1 (Future Orientation)	1.000			
par2 (Future Orientation)	1.353	.239	5.664	***
par3 (Future Orientation)	.985	.230	4.278	***
par4 (Future Orientation)	1.602	.273	5.864	***
par5 (Future Orientation)	1.678	.282	5.957	***
par6 (Active Skill)	1.000			
par7 (Active Skill)	1.005	.109	9.190	***
par8 (Active Skill)	.702	.115	6.111	***
par9 (Active Skill)	.637	.092	6.890	***
par10 (Active Skill)	.967	.096	10.119	***
par11 (Risk Taking)	.873	.089	9.835	***
par12 (Risk Taking)	1.082	.098	11.022	***
par13 (Risk Taking)	1.097	.093	11.811	***
par14 (Risk Taking)	.852	.082	10.412	***
par15 (Risk Taking)	1.000			

Table 3: *Measures of Goodness of Fit for the Measurement Model*

Latent Variables (RBS)	χ^2	df	GFI	CFI	RMSEA
Adolescents' Resiliency (n1 = 160)	7.221	4	.941	.939	.06
Adolescents' Resiliency (cross validation model) (n2 = 148)	7.38	4	.954	.923	.06
Adolescents' Resiliency (n3 = 308)	1.327	1	.998	.996	.03

6. Hypothesized Model and Discussion

Figure I present the estimated three-factor model for adolescents' resiliency of RBS, using the data from 308 students. Items from each scale are assumed to load only on their respective latent variables. The overall fit of the 45-item measurement model is summarized in Figure 1. The goodness-of-fit results indicate the hypothesized model is consistent with the data. Root Mean Square Error of Approximation (RMSEA) has been recognized as one of the most informative criteria in covariance structure modeling. The RMSEA takes into account the error of approximation in the population [5]. Values less than .05 indicate good fit and values as high as .08 represent reasonable errors of approximation in the population. For CFI (Comparative Fit Index) and GFI (Goodness of Fit Index), values close to 1.00 being indicative of good fit. Although a value of $>.90$ was originally considered representative of a well-fitting model, a revised cutoff value close to .95 has recently been accepted [5]. Because the CFA model focuses on the link between factors and their measured variables, within the framework of Structural Equation Modeling (SEM), it represents what has been termed a measurement model.

All the 45 items have non-zero loadings to the three factors. Refer Table 2 for the maximum likelihood estimation. All the items loaded significantly to the three factors. The direction and magnitude of the factor loadings were substantial and

statistically significant. The model is free from offending estimates and the internal consistency estimates satisfied the standard deemed necessary in scale construction.

The result of this analysis is presented in Table 3. Analysis of the 45 items resulted in a well-fitting model for the first analysis, $n = 160$ ($\chi^2 = 7.22$; $df = 4$; $GFI = .94$; $CFI = .93$; $RMSEA = .06$). Both the fit indicators, the GFI and CFI exceeded the threshold of .90, the standard deemed important for model fit [5]. Furthermore, the root mean square error of approximation (RMSEA = .06) indicated a well fitted hypothesized model.

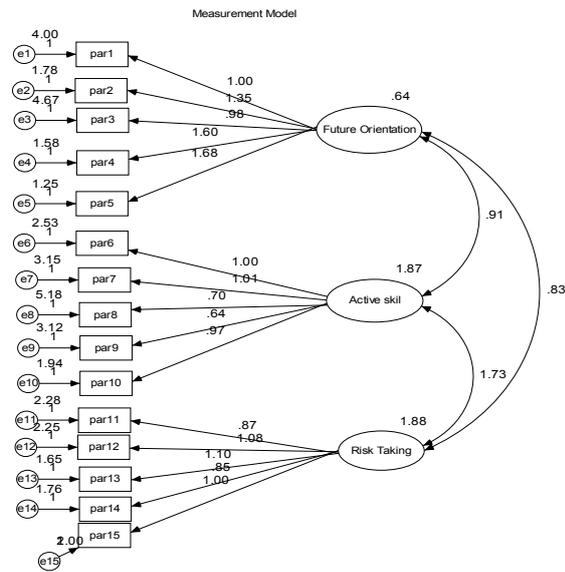
To further validate the likelihood of the hypothesized model, a second confirmatory factor analysis (cross-validation) was applied on the data collected from 148 students. The results of this analysis is presented in Table 3 in cross validation model shows the well-fitting model ($\chi^2 = 7.38$; $df = 4$; $GFI = .95$; $CFI = .92$; $RMSEA = .06$).

The third validation was done by combining all data, $N = 308$ to further validate the confirmatory factor analysis. The results of the analysis is presented in Table 3 shows that analysis of the items resulted in a well-fitting model ($\chi^2 = 1.32$; $df = 1$; $GFI = .99$; $CFI = .99$; $RMSEA = .03$). Therefore, the above results show that RBS is :

- a) internally consistent measure of resiliency (above the satisfactory value)
- b) a valid measure of resiliency
- c) all items loaded significantly to the three factors
- d) a well-fitted model of adolescents in Malaysian context.

With regard to dimensionality of the RBS, the current findings indicate that the scale is multidimensional and first-order factor. All items loaded significantly to the three factors (future orientation, active skills, risk taking and independence).

Figure 1. Adolescents' Resiliency of RBS : The Hypothesized Model



(par1-par15 represent observed variables; e1-e15 represent error variances; double-headed arrows depict correlations among factors; single headed arrows from factors depict factor loadings)

7. Conclusion

Present findings show that the RBS is a reliable and valid measure of resiliency among adolescents in Malaysia. The study contributes to the development of a psychometrically sound instrument to assess adolescents' resiliency of Resiliency Belief Scale. The results of the confirmatory factor analysis support the assertion that the conception is a multidimensional construct. These findings are consistent with previous studies of resiliency of assessment [1] ; [2] ; [19]. Previous studies using this instrument were conducted in English. Evidently, the current study which made use of the same instrument in Malay language yields consistent findings.

This study has implications for educational practices, especially assessing resiliency of adolescents. Since the 45-item three-factor structure yields a valid and reliable measurement model, the conception scale is therefore, useful in conducting diagnostic assessment of resiliency among adolescents in Malaysia. Future research should examine whether the present findings generalize to other samples and settings. Furthermore, it is important to use the local version of RBS in the future research because many people feel more comfortable in expressing their feelings in their own language as compared to a foreign language.

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Language Teacher Education: Polycultural Competence Development

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Abstract

Polycultural competence is regarded as a new perspective in the theory and methods of teaching foreign languages based on the cognitive linguistic and focused on the fact that teaching foreign languages is not only a language code acquisition. An important component of teaching is the conceptual world picture of native speakers belonging to different cultures. To understand their similarities and differences is necessary for positive interaction in the situation of multicultural globalizing world.

1. Introduction

In order to prepare future teachers for their effective professional activity in the globalizing polycultural world so that they could help their future students to communicate and to cooperate with different people in the world, we have created a new approach to the process of teacher training. The idea of our approach is based on a new goal in the system of teacher training: to develop a new type of competence – polycultural - including polylinguistic, polyconceptual and communicational-technological competences. All these competences were defined in the process of investigation of the demands of new global society. Further on we have created a new methodological system of teacher training, which includes principles, material based on the Internet resources, technologies.

2. Polycultural competence: the development of its model

The research in the sphere of intercultural and interpersonal communication, which included the works of such well-known specialists as M.J. Bennett [1], M. W. Lasting and J. Koester [2] and many others, helped us to come up to the idea that interdisciplinary investigation should be fulfilled for the purpose of developing a model for polycultural competence which is required in the global society. The fact is that many scientists agreed in the conclusion that the main reason of misunderstanding between people belonging to different cultures is not in the sphere of language (it is not difficult to

overcome this problem), but in the sphere of mentality, conceptual picture of the world. The problem of this investigation lied within such areas as intercultural communication, linguistic education, sociology, psychology.

Sociology studies of globalization as social theory and global culture and of multiculturalism as its result have proved the idea of the importance of developing new group of competences in the new generation of foreign language teachers. They should know how to build bridges with the representatives of various countries and cultures, but not only with the only foreign country the language of which they learn. The world itself is becoming polycultural. Consequently it is not enough to teach students to understand only one culture.

Intercultural communication and linguistic education (especially cognitive linguistics) studies proved the idea of including the theory and practice of conceptual analysis into the system of teacher training so that they could be taught the procedure of analyzing different language material [3]. This type of the competence we have called polyconceptual. The knowledge and skills which are included into it are connected with conceptual analysis technique on three levels of investigation: word etymology, dictionary analysis (nuclear components), context analysis (interpretation components). As far as in the system of conceptual spheres there exist four of them [4] it was decided to follow this subdivision and to develop four types of conceptual competences: in universal, ethno-cultural, socio-cultural and individual concepts. One of the main goals here was to teach student understand that universal concepts only partially have common features in different cultures, in many aspects their interpretation in different cultures is different.

Linguistic education and sociology studies in the field of communication in multicultural society were accepted by us as the ground for one more competence in a student teacher – polylinguistic. Two approaches are developed here: either to learn English as the language for intercultural communication or to learn several foreign languages (which is more preferable).

Our own investigation of hundreds of Internet recourses (web-sites, forums, chat-conferences), containing huge amount of cultural information of

different level made us understand the necessity of including communicational-technological type of competence into our model. Nowadays our intercultural and polycultural communication in the greater part takes place in the virtual reality, in the Internet. Knowing the rules, language, strategies for this type of communication is important for a modern language teacher.

3. Methodological system for developing a polycultural competence

For developing of all those components in the model of polycultural competence we have designed a special implementation system, which included such parts as principles, language material, topics, technology.

It is important to mention that the topics were formulated by the students according to their own interests, only after that the concept for investigation was chosen from inside the topic. For example, in the topic “Changing attitude to bad habits” the concept “bad habits” was analyzed in different cultures; in the topic “The role of money in our life” the concept “money”; in the topic “Surrogacy: is it the way out?” the concepts “maternity” and “marriage” were investigated.

Speaking about technological part of this system it’s possible to name special system of exercises created for this purpose:

- group 1: for developing communicational – technological competence;
- group 2: for developing polylinguistic competence;
- group 3: for developing polyconceptual competence.

In order to integrate all the necessary material in one and the same place we have designed a personal web-page, where all the theoretical information about different types of Internet communication, about linguistic peculiarities of the Internet is included [5]. The advantage of the professor’s personal web-page for the given course is in the opportunity for the students to open any hyper text which they need as far as their collection on the web-page is very big. It contains connections with e-dictionaries, web-sites and special texts, forums, chat-groups.

4. Polycultural competence: evaluation of its development

In order to evaluate the development of polycultural competence the experiment was held. There were organized two groups of students at the department of foreign languages in Kemerovo state university: the control group - the classes in which were given in regular way (54 students), and the

experimental group (35 students). There were created four stages for realization of the new system of teacher training (see Table 1).

Table 1. Stages for competence development

Stages	Competences	Means	Types of exercises
1. Preparatory	Communicational - technological, polylinguistic	Internet resources, language	Exercises on technological and linguistic features of Internet
2. Interaction	Polyconceptual, polylinguistic	Dictionaries	Lexical presentation of concept
3. Individual Investigation	All competences	Web-sites, forums, chats	Contextual presentation of concept
4. Creative presentation	All competences	Oral presentation	Essay-investigation

The results were evaluated on the bases of the final essays-investigations. In order to evaluate such type of the competence as polyconceptual, the following skills were analyzed: the skill to define the universal cultural concepts, typical for the cultures in contact; the skill to define specific ethnocultural content of the universal concepts.

In order to evaluate the polylinguistic competence such skills were taken into account as: the skill to define cultural characteristics of the communication partner and transfer his own culture with the help of the English language as an international one; the skill to underline cultural features of the communication partner on the bases of his native language.

Communicational-technological competence was evaluated according to the capability to use the Internet resources for the purpose of searching for necessary information and creating interaction with representatives of different cultures.

Three levels of the development were defined: high, medium, low. The students of the experimental group demonstrated only high and medium level of polycultural competence development. These results proved the effectiveness of our system for foreign language teacher training.

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Learning Generator: Neuro-Linguistic Programming and Learning Styles in English Textbooks

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Abstract

After analyzing the proportion of the learning styles in the text books used to learn English as a second language, changes should be made to improve the quality of education of books as they only benefit a small percentage of students. The higher representation of exercises that benefits the Reflectors Style demonstrates that all the editorials follow the natural the method, being very poor in deductive techniques, which makes learning for some students quite difficult. Text books should act like a tool that generates learning, and if we perfected it considering the different Learning Styles, we would be creating a Learning Generator: an optimal tool of learning.

1. Introduction

It is obvious that the general implantation of the so fashionable natural or communicative method in the teaching of English does not give the awaited results. The students who finish obligatory education do not end up their studies with a level of English that allows the oral and written communication. This investigation analysing the more widely used text books in the classrooms could discover the reason. Although it may seem excessive, this investigation exceeds the expectations since the initial intention was only to see what editorial was better in quality taking into account the diversity of learning styles, but this investigation has ended up finding the main failure of the tendency in education in second languages; the communicative method fails because it has an excess of representation of a single Style, which is the one of smallest representation among the students (Reflectors Style).

2. Goals

Our students have a preference for certain learning styles, letting obsolete the old system centred in the teacher and in order to make learning effective, each student requires of a style of education adapted to his own way of

learning. It also has the additional problem that not all the teachers have much knowledge of that variety and do not know the strategies to follow according to the theories of the Learning Styles. The importance of this investigation is to have tried to optimise the education and practice of a foreign language, increasing the level of knowledge of all the students using a Learning Generator or common text book for all the students of a concrete English level, organizing it previously so that it teaches up to the maximum capacity of each student, considering their Learning Style and thus eliminating the teaching style of each teacher.

3. Hypothesis

If text books acted like a tool that generated learning to all the students and not to just a group of them, and if we perfected it considering all the different Learning Styles, we would be creating a Learning Generator: an optimal tool of learning. That "Learning Generator" would make possible to all the students to learn at their maximum capacities. In this investigation the methodology of the main editorials in English teaching text books has been analysed (in general and by units) in order to see what percentage of quantitative representation they have of the different learning styles corresponding to the theories of Honey and Mumford (Activist, Reflectors, Theorist and Pragmatist) and we have seen that books do not follow the theories of the Learning Styles.

4. Methodology

In order to identify the learning styles we must take into account the investigations made by David Kolb and Peter Honey. Both investigations are complementary and they help us to identify the different learning styles and to see the different ways of learning that each individual has. It is clear that we cannot choose our students and, consequently, the learning styles of our students, but we can choose a teaching method that benefits all our students. In this investigation the methodology of the main editorials in English teaching text books

has been analysed (in general and by units) in order to see what percentage of quantitative representation they have of the different learning styles corresponding to the theories of Honey and Mumford (Activist, Reflectors, Theorist and Pragmatist) and we have seen that books do not follow the theories of the Learning Styles.

5. Results

Not only do students have their preferences and their style of learning. All the teachers have our own style to give class, and that style is also reflected when we use the different representational systems. Most of us tend to use a system more often than the others when we teach. In order to detect what our tendencies are, we need to analyse our way of teaching from the point of view of the NLP. Generally, in all the groups of students we will find different types of learning styles. If our teaching style is the same one as the one of our students, the learning will be easier for them than if is not the same one, and with a book balanced in the different styles we will be benefiting all our students. Each editorial has common characteristics and differential characteristic. One of the main common characteristics that have been found after analysing different editorials belonging to the same level is the great numerical equality of exercises that benefit the different systems of Neuro-linguistic representations. The neurolinguistic representation in the editorials would be; Visual; 35 % , Auditory; 33 % and Kinaesthetic; 32 % The Oxford publishing house turns out to be the one that benefits more the students with predominance in Visual style (50 %). Cambridge is second (41.5 %), Pearson occupies third (38.5 %), whereas Heinemann (24.1 %) and Richmond (20.8 %) includes a smaller representation of exercises that benefit this group of students. The Visual style is the one that has the greatest representation in three of five editorials, although not by much from the second predominant style, the Auditory style. The one with the greatest percentage is Heinemann (44.1 %), followed by Richmond (40.8 %) and Cambridge (30.5 %). Those that have a smaller percentage are Oxford (26 %) and Pearson (24.2 %). The Kinaesthetic style is the least represented in two of five editorials although not by a remarkable difference from the other representational systems, and varies between the greatest representation of Richmond (38.4 %) and the representations of Pearson (37.3 %), Heinemann (31.8 %), Cambridge (28 %) and Oxford (24 %). This analysis demonstrates that the books of the most sold and used editorials are near being learning

generators. The percentage of visual children habitually is very superior to the auditory and Kinaesthetic children, for that reason many activities go to these children. One of the main common characteristics after analysing different editorials on the same level is the great representation of exercises that a Learning Style has over other Styles. The average representation in percents of the Learning Styles in the analysed editorials would be; Activist; 18.4 %, Reflector; 49.4 %, Theorist; 17.8 % and Pragmatist; 14 % The Reflector Style, with a representation of 49.4 %, is the Style all editorials benefit. This data is common in all the analysed editorials. The Activist Style occupies a second position if we consider the average, with 18,4 % of representation, but it has only been the second more represented Style in three of the five editorials. The third represented Style is the Theorist Style, with 17,8 %, that is also the second most represented Style in three of the five analysed editorials. The Pragmatist Style, with a representation of 14 %, has been the least represented Style in three of the five editorials, and it is, the Style with the smallest representation in general. The Richmond publishing house turns out to be the one that most benefits the students with predominance in Activist Style (30 %). The Pearson publishing house is second (23 %) and Cambridge and Heinemann occupy third (17 %), whereas Oxford has the smallest representation of exercises that benefit this group of students. The Reflector Style is the one that has the greatest representation in all the editorials, and with a clear advantage in percentage from the second predominant Style. The publishing houses with the highest percentage (56 %) are Oxford, and on the other hand, Heinemann is the one that has the lowest percentage (43 %). As it can be verified, the highest score and the lowest do not distant to a great extent. Heinemann is also the publishing house with the greatest percentage in representation of exercises with Theorist Style (29 %). Oxford occupies the second position (22 %). Cambridge (17 %) and Pearson (14 %) occupy the following positions and Richmond has the lowest percentage (7 %). The Pragmatist Style is the least represented style and varies between Pearson and Heinemann (11 %) and Oxford, Cambridge and Richmond (16 %).

6. Discussion

The excessive representation of exercises that benefit the Learning Style with less students and the small representation of exercises which benefit the students with majority styles demonstrate that the text books follow a mistaken tendency. The higher representation of

exercises that benefits the Reflectors Style demonstrates that all the editorials, without exception, follow the communicative or natural method. The editorials do not consider the different Learning Styles of the students, and it is centred in a method that will soon be obsolete because the academic results do not reflect a good result. After analysing the main deficiencies, some activities were created so as to deal with the deficiencies of the analysed text books (schemes, additional material for the professor...), and verified if the modifications previously mentioned were effective as far as the attainment of the objectives proposed by each book, using a control group to which these modifications were not applied to. The results were highly rewarding since the students with Learning Styles with smaller representation in text books obtained better results than those that did not make the activities, since they belonged to the control group. This demonstrated that the complementary activities that had been prepared to replace the deficiencies of books, adding exercises and activities that benefited students from no-Reflectors Learning Style were positive. There seemed to be a connection between certain Learning Styles and certain linguistic aspects, seeming to have a relation between the oral abilities and the Activist and Pragmatist Styles, and between the written abilities with the Reflector and Theorist Styles, since they improved paralleling according to the worked linguistic area. Those students that obtain worse academic results, perhaps by the format generally used of examinations are the students with Activist Style, being the students with better academic results those of Theorist Style, whom the format of the examinations benefit to, and the students of Reflectors Style, probably due to the insistence in text books to work this cognitive facet. The use of a pedagogical approach and the elaboration of the learning programming of a second language must respond to several considerations. In a deductive presentation one begins with axioms, principles or rules. A great percentage of the class is deductive, probably being an elegant and efficient way of introducing what it is taught. Nevertheless, it is evident that to incorporate an inductive component in education promotes an effective learning. Thus, inductive education has to have its place just like the deductive one. Connecting this to the education of second languages, we could say that, at the moment, the deductive method would be the classic one or Taylorist and the inductive one would correspond to the natural method, so fashionable nowadays. For this last one, to acquire a language means a gradual learning, obtaining the ability of communication

without the necessity of using the rules that a teacher explains, which benefits the students with a predominant Reflector Style, since they are observers, compilers and assimilators. Different to other subjects, the teaching of English as a second language is very poor in deductive techniques, which makes the learning of students with predominant Theorist Style quite difficult. If we have to balance deduction and induction, the used text books in the English language teaching follow a wrong methodology, since they benefit a single style, the Reflexive, making learning difficult for students with other Learning Styles. This happens because the editorials follow the natural method. Thus, we must conclude that this method does not benefit the great majority of students and, consequently, we should have to eradicate it, or, at least, to modify it.

7. Conclusions

We can conclude with clear evidence that the editorials do not consider the different Learning Styles at the time of programming their books. On the one hand, they do not seem to consider the percentage of representation of the pupils pertaining to each Learning Style. But on the other hand, they seem to consider the present tendency in the methods of education of the foreign languages, since they are centred in natural and communicative methods, leaving aside, for example, the grammar explanations that would benefit students with Theorist Style. Paradoxically, they do not turn out to be very communicative since they do not include a great variety of communicative exercises that would benefit the students from Activist and Pragmatist Style. This must be because the text books are built considering educative contexts where classes have an elevated number of students, which makes the accomplishment of these activities difficult. Now it is time for the editorials to pay higher attention to the theories on Learning Styles than to the present educative tendencies, as the communicative and natural methodologies in the foreign languages do not benefit all the students. Text books act like a tool that generates learning, and if we bettered them considering the different Learning Styles, we would be working with a real Learning Generator for all the students, without any exception at all. Can we imagine a learning system where all the students learned at their best? What degree of knowledge could those students end up reaching if this system were implanted in a generalized manner? It seems a utopia, but it is an attainable utopia if we prepare text books that benefit all students. If we used a method which benefits all our

students, we would be creating students who would learn to the maximum of their capacities and all the society would benefit from that.

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Investigating the validity of language proficiency and lexical richness measures using Four Stands Model by Nation

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Abstract

This study aims to investigate validity of measures of lexical richness and language proficiency of candidates who are given second language writing tasks to use their vocabulary in a productive way. To test something, students must have learned something first, for which we refer to Nation's Four Stands Model. For this purpose, a pilot study as a part of a PhD project has been conducted in two stages. Firstly, candidates' language proficiency is gauged by a standard C-Test used in UK universities. Secondly, lexical richness of students has been indexed by means of CLAN through writing tasks in 4 consecutive sessions that were held weekly in two separate intact classes. Two groups practiced productive descriptive writing tasks in a parallel way.

1. Introduction

Validity is an inseparable requirement of language tests and currently been studied by language teachers, applied linguists, and measurement specialists alike validity is viewed as a consummating step beyond ensuring reliability of test scores against significant measurement error. Therefore, validity concerns interpretations and consequences of scores in context, widening the focus to becoming aware of outside factors and practicalities of test performance. It is described as the most important quality of test use [1]. Fulcher and Davidson [2] place it in the forefront of research in language testing in a symbolic move to point out its place in language testing research. In line with developments in language testing, many measures of lexical richness have been developed in the past decades [3], yet their construct validity is not well addressed in literature. This is a significant gap particularly as "lexical resource is one of the criteria on which the candidates' performance is assessed." [4]. Considering the fact that "oral texts are not as tidy as written ones" where many non-native speakers have little opportunity to practice vocabulary in their speaking than in their writing

before they perform in a high-stakes test of proficiency, research can offer insight into characteristics of their written vocabulary use.

2. Literature Review

Given the large vocabulary of English, learning and using it has been an especially important part of its proficiency. Acquiring the vocabulary of a language requires the learner to engage in a substantial learning process. After the research neglect in pre-eighties, second language vocabulary has come into the focus of several studies and relevant issues from every depth to the width have been addressed. Research in Vocabulary Acquisition [5] and research in Vocabulary Testing [6] includes works produced in 1990s, special issues of journals, and many research articles investigating fine details of word learning, storing, and processing. This emphasis should not just be on the quantity but also the quality of vocabulary needs attention. While tests of vocabulary size and coverage have mainly addressed quantity, an index of Lexical Richness can be created to measure quality of vocabulary.

Despite several formulations, the quest for more accurate measures for lexical richness seemed to be for the Holy Grail [7]. Index of Guiraud is an accurate measure which is more than 50 years old. Lexical richness is defined as an overarching notion covering some aspects of vocabulary use, such as lexical sophistication (number of low-frequency words), lexical density (ratio of content to function words) [6] and also lexical diversity that is 'the variety of active vocabulary deployed by a speaker or writer' [8]. The latter has found applications in various fields such as stylistics, language acquisition, neuropathology and forensics [9]. Quite a lot of studies investigate lexical richness but the debate regarding the validity of those measures is continuing into the 21st century [2],[3],[4],[7],[8],[9].

3. Contribution to Knowledge

Commonly, too much emphasis is placed on spoken language as the sign of language ability. In an Iranian context of initial data gathering, written language is more useful for students because they could find little opportunity to practice their language through speaking but they are involved in a variety of writing tasks, ranging from assignments to writing for pleasure and expressing themselves in a community of like-minded bloggers, essay writers and journalists. Therefore, this study aims to investigate validity of measures of lexical richness and language proficiency of candidates to look through the lens provided by Messick's [10] view of validity. He sees it as an evaluative judgment of appropriateness of inferences based on test scores.

4. Conclusion

Nation's Four Stands Model [11] constitutes the theoretical background for this study, which in a nutshell, is the idea of even dividing of class time between four meaning-focused input, meaning-focused output, language-focused learning and fluency development activities. The preliminary conclusion from the pilot study sets a useful step in testing how tasks work in a small-scale study includes identifying some task inappropriacies and discrepancies which will be rectified in the main data collection phase. More vital issues were also faced that comprises of the issue of task presentation and choice. To improve face validity tasks assuming more academic knowledge are suggested and tasks with possible cultural load are discouraged. As the students showed enthusiasm to the picture description tasks, this task type may be an advantageous choice in terms of context validity. The student's attitude and motivation towards a measure or a task is found to be a significant element in determining the validity of that task and the test thereof, since its absence has led students to take the task lightly whereas its presence has led students to do them fully. It let their lexical knowledge flourish when they used it with picture prompts under controlled conditions. Among the ultimate aims of the project is to consider which aspects of language proficiency are measured by indices of lexical richness and to explore them in the light of construct validity.

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**Session 2B: Cross-disciplinary areas of Education,
Language Education, Art Education, Musical
Education, Reading Education**

The Efficacy of Schools of the Creative and Performing Arts
(C. Northington-Purdie)

Professionally-Oriented English
(Roza Zhussupova)

Junior High Schools Music Education Curriculum Development in France from 1925 to 2008
(Odile Tripier-Mondancin)

Violence in Schools: Student perceptions of what Constitutes a 'Safe School'
(Chiang Le – Heng, Steve Killip, Alan W. Leschied)

Educating for social cohesion in plural societies: The ethical basis
(Nur Surayyah Madhubala Abdullah)

The Efficacy of Schools of the Creative and Performing Arts

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Abstract

Traditional middle and secondary schools offer a multidisciplinary approach to the curriculum with an emphasis on college and/or vocational school preparation. The prevalence of such schools across the country suggests a one-size-fits-all approach to education. There are however, over 200 public middle and secondary schools for the performing and creative arts in the United States. These schools offer an alternate focus, pedagogy and modus operandi. These taxpayer-funded schools provide a haven for talented students with exceptional creativity. The performing arts school experience is unlike that of any public high school. As the Obama administration re-conceptualizes federal programs such as the No Child Left Behind of 2001[1], it would be prudent to examine the philosophies and practices of schools for the creative and performing arts. Information about these unique and transformative programs with personal narratives from parents and teachers shed light on what has heretofore been a valuable yet overlooked resource.

1. Introduction

Traditional middle and secondary schools offer a multidisciplinary approach to the curriculum with an emphasis on college and/or vocational school preparation. The prevalence of such schools across the country suggests a one-size-fits-all approach to education. In the United States, schools of the creative and performing arts offer an alternate educational focus, pedagogy and operating system. The United States Department of Education refers to them as magnet schools. Magnet schools provide a unique service in that they are distinctive and appealing in their focus. They draw “from a diverse range of families from throughout the community eager to enroll their children even if it means having them bused to a different and, perhaps, distant neighborhood”[2] In order to adhere to this

criteria, performing arts schools must offer a specialty-that is not available in other area schools. Students who attend them, therefore are residents of the surrounding geographic area who have chosen to attend these schools rather than the multidisciplinary school in their neighborhoods [3].

2. Review of the Literature

Public high schools for the creative and performing arts are an overlooked and undervalued influence on the career paths of thousands of adolescents across the country. There are more than 150 public taxpayer supported middle and secondary magnet schools specializing in the creative, performing and communication arts in the United States. Although they are required by law to adhere to the criteria of standardized assessments specified by the No Child Left Behind Act of 2001[4], they provide the opportunity for thousands of adolescents to pursue interests that lie beyond the traditional college preparatory subject matter. When presented with an entire student body of people who share the same basic interests, these schools are an oasis of creative and artistic exploration. Graduates of such schools often become great advocates of the arts in education. A panel decides whether they are accepted into the school. These taxpayer-funded schools provide a haven for talented student who would have been overlooked or misunderstood in traditional programs.

The first high school for the performing arts was established in 1948 in New York City. Fiorello H. La Guardia High School for the Performing Arts is arguably the most popular school its type due to the feature

film *Fame* and subsequent television showcased school life in a fictionalized version of it in the 1980's. When the film and television show ended, the national recognition of these specialty magnet high schools seemed to fade from the collective consciousness of popular culture. It is almost as if the schools ceased to exist when the television went off their air. Nothing could be further from the truth. LaGuardia High School remains however the largest performing arts school with over 2000 students attending [5].

Students choosing to attend performing arts school (both middle and secondary) must be selected from pools of hundreds of students. They are usually asked to audition or submit portfolios and/or examples of their written work. Once enrolled, they take the standard variety of vocational and college preparatory courses in addition to those devoted to their specific fields of study or major [6]. Courses offered in their majors are scheduled in a block-scheduled format that enables students to devote a significantly longer amount of time on their major than they would have at a multidisciplinary high school.

3. Analysis of Findings

The performing arts school experience is unlike that of any public high school. The dropout rates of these magnet schools are significantly lower than those of traditional middle and secondary programs [7].

4. Conclusion

As the Obama administration re-conceptualizes federal programs such as No Child Left Behind Act of 2001, it would be

prudent to examine the philosophies and practices of schools for the creative and performing arts. Information about these unique and transformative programs with personal narratives from parents and teachers shed light on what has heretofore been a valuable yet overlooked resource. Moreover, they offer a viable, educational alternative option for nontraditional students.

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Professionally-Oriented English

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Abstract

With the spread of globalization has come the increasing use of English as the language of international communication. More and more people are using English in a growing number of occupational contexts. That is why for young specialists the urgent problem is appeared as the specific and detailed content and aims of the language, skills and genres are determined by the needs of a specific group of learners. Some teachers are afraid of making the transition from teaching general English to teaching English for Specific Purposes (ESP). There is also the danger that the novice ESP teacher will only use materials that they feel comfortable with and will not stretch their learners. This article is devoted entirely to the presentation and exemplification of a new educational supply “Professionally-oriented English”. The main objective of this course is to develop the students’ abilities in usage of English for communicative purposes and their future professional needs at the overall development of speaking, writing, reading and listening skills.

1. Introduction

The need for young specialists with the high level of proficiency and a good command of a foreign language has been extremely growing for the last fifteen years. It is connected with the process of general globalization of modern society, on the one hand, and with the processes of democratization in the countries, on the other. The topicality of this problem is defined in the light of the present social and political situation in the reforms of higher schools in Kazakhstan, and harder requirements to the training quality, the sphere of higher education has responded to present day’s demands in time. Integration tendencies of techniques world size development inevitably and with extreme necessity raise the question on the level of professional competence of new generation specialists, besides objectively determines demand of broader range of thinking, the whole system of knowledge, skills, intellectual abilities and personally welfare of each human being.

2. Literature Review

Now I observe the development of theoretical and practical materials for teaching English for Specific Purposes – “ESP should properly be seen not as any particular language product but as an approach to language teaching which is directed by specific and apparent reasons for learning” [1; 16-17].

According to Dudley-Evans [2] the absolute characteristics of ESP are:

- ESP is defined to meet the specific needs of the learners.
- ESP makes use of the underlying methodology and activities of the specialism it serves.

It is centered not only on the language (grammar, lexis, register), but also the skills, discourses and genres appropriate to those activities. ESP practitioners are also becoming increasingly involved in intercultural communication and the development of intercultural competence. But there is the urgent necessity for English language learning specifically designed for non-language students, which would combine theoretical background with new techniques and materials. I work out the syllabus of Professionally-oriented English for students, who knows Elementary English and has some professional skills.

New course should meet the following requirements:

- It should take into account the latest achievements and research findings in curriculum/syllabus design
- The material included should be coherent and logically structured to meet the student’s needs
- Skills development and language acquisitions should be subordinated to future professional activity of students
- It should contain the system of assignments.

The proposed themes of professionally-oriented communication are as follows:

1. Innovational technologies
2. Technological changes
3. Famous amateur specialists of my (English-speaking) country
4. Integration
5. My future professional competence

6. Business management [3]

7. Globalization

The main objective of the course is to develop the students' abilities to use English for communicative purposes and their future professional needs. The course is aimed at the overall development of speaking, writing, reading and listening skills; at the development of professional communication skills in terms of oral and written communication and listening skills.

To meet the students' needs the course tasks are:

- to extend knowledge and control of core grammar
- to increase professionally-oriented vocabulary
- to develop oral communication skills for general communication
- to develop skills to exchange information and opinions in the context of professionally-oriented topics
- to develop skills of reading English authentic professionally-oriented texts for special information
- to develop ability to write instructions, descriptions and explanations in bounds of professionally-oriented topics
- to develop skills to communicate by mail
- to develop listening skills, e.g. the ability to understand native speakers discussing professionally-oriented topics.

3. Contribution to Knowledge

In this paper I'd like to submit for your consideration a new educational supply "Professionally-oriented English", which is worked out by me. It's absolutely convinced that to teach anything successfully, you have to find out what the student knows and is interested in finding out. The learning process is structured through a series of units:

Unit 1. SHAPING THE FUTURE

Unit 2. FIRST IMPRESSIONS LAST

Therefore, this "Professionally-oriented English" always follow the learning **phases**:

- activity phase involves can be finding what the students know. This allows finding out what the students think about a topic
- debrief phase involves eliciting what they know and correcting misconceptions
- implementation phase involves asking the class how what they have learned has changed their image and what they might do differently as a result

The tasks of these units are specified in terms of input, teacher-student roles, procedures, setting, monitoring, action, outcomes and feedback.

Tasks are structured through the following types:

- Pre-reading exercises, which fulfill the function of warming-up the students and concentrating their attention on the text that follows.
- Vocabulary exercises, which follow the text and are aimed in learning and practicing new vocabulary. Moreover, terminology on any speciality is just over-complicated. I always try to write up a short example which helps my learners to understand meaning and usage, and if I think it is relevant I add other related words, as an example, derivatives, words with similar meaning, or an idiom based on the word. I also add phonemic script if it is useful. I don't try to add too much information every time. Here the students will work with lexical models, with the help of which lexical units are integrated into long-term memory.
- Specialist reading. Long authentic texts in bounds of professionally oriented topics will create motivation for learning new vocabulary.
- Writing tasks will mostly include general business English writing and professionally-oriented writing. Students have a great need in mastering the skills of writing resumes, CV, Letters of application, faxes, email messages, as well as writing different descriptions, explanations and instructions for their future partners abroad.
- Speaking tasks will provide the students an opportunity to exchange information and their viewpoints in bounds of the topic presented in the text. They will work in pairs and in small groups, which will develop their communicative skills. They will also learn how to conduct meetings and presentations. Special attention will be paid to preparation of reports on professionally-oriented topics and to participation in conferences.
- Problem-solving tasks will help to include the newly learned vocabulary into the process of exchanging opinions, discussing the problem. These tasks are based on professionally-oriented situations, which create motivation in mastering the vocabulary.
- Contemporary English language literature tasks. The genre of dystopia in English language literature has its place and shows an important role in modern culture. The genre goes back to early Utopias, nevertheless it is gaining more and more popularity nowadays due to some negative phenomena of social life. Contemporary writers, like those of all previous epochs, are trying to predict and prevent the inhuman tendencies in society. The given extracts can be of practical use for those who are interested in literature or social studies. The focus is on the works by the prominent contemporary men of letters - Kurt Vonnegut, Isaac Asimov, Ray Bradbury. The writers enjoy the reputation of the leading authors of contemporary dystopia. The expected practical value of reading

the selections is to promote positive values and cultural, moral standards in the modern world. Role-play will be fulfilled as the last stage in mastering the topic and will crown up this process. Students will need to use all the knowledge and skills accepted while working at the topic. By the way, presentations have a role but even these can be turned into activities. A project involves students in deciding together what they want to do to complete a project whilst the teacher plays a more supporting role. On the other hand, it's very responsible and important, because it needs teacher's proficiency and knowledge of every student's possibilities in communicating. The communicative tasks offer opportunities for language learning through problem solving, cooperative learning, collaboration and negotiation of meaning and whether this task should be done within the whole group, or between students, or students with group, or in groups.

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4. Conclusion

The "Professionally-oriented English" aims to find the activities that will involve the class using a task based learning approach means that we can use even the textbook more interactively. The approbation is conducted in the course of experimental teaching students of the Kostanai State University named after A.Baitursynov, within the framework of the department of teaching English, and some publications at the republican and international conferences. Here at the conference I can illustrate some tasks at the master class or workshop. Besides it's a great opportunity for me to present a new educational supply for discussing. Thus, ESP has become increasingly important as:

- There has been a growth in vocational training and learning throughout the world.
- With the spread of globalization has come the increasing use of English as the language of international communication. More and more people are using English in a growing number of occupational contexts. Students are starting to learn and therefore master general English at a younger age and so move on to ESP at an earlier age. The qualitative changes in the course design of professionally-oriented English for non-language students will definitely affect the students' standard of the English language knowledge.

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Junior High Schools Music Education Curriculum Development in France from 1925 to 2008

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Abstract

Before 1977, the references employed shows that texts are more teaching-oriented rather than learning-oriented. The various sorts of knowledge are superimposed according to positivist cumulative even teleological logic as regards the history of music, solfeggio, audition and singing. The dimensions and transformations which can be found in these official texts are analysed from an epistemic and didactic point of view according to the text analysis method (*Tropes software*). The 1977 marks a transition: training in art and through art. From 1977 to 1998, historic determinism is replaced by a constructivist representation of knowledge: the advent of the subject pupil, the primacy of sensitivity and of practice over knowledge. The auto-structuring purposes (expression, invention) replace the hetero-structuring purposes (works of art, history of music, solfeggio). This paper focuses on the emerging explicit and implicit values in seven different curriculum developments for teaching music from 1925 to 1997.

1. Introduction

We understand the concept of value as any idea or preference judged valid by a group of people, in the present case, the writers of the curriculum [1], any idea which motivates, which determines a choice, which is considered as a reference to evaluate as well as any ideal or ought to be [2]. This definition, a synthesis of many written works was elaborated thanks to the method called the “proximity associative matrix” in a purpose of denotation [3]. The definitions which have been collected have been compared with what is considered as value in the works of various specialists, from a categorical and no longer definitional point of view.

To mention the values, the utterances are numerous. According to David Wiggins (1991) cited by Ruwen Ogien [4], one distinguishes the utterances of values from those of norms the former being evaluative and made of expressions of appreciation or depreciation whereas the latter are prescriptive or directive (expressions of obligation, interdiction,

deontic markers like “one must” “it is necessary” “it is forbidden”). According to the semiological approach [5], the synaesthetic (sensorial) dimension is present in the utterances of values [6].

If we can reach the values only by inference [7], if they are not always conscious in the actors’ minds [8], on the contrary the opinions, the behaviours, the choices in terms of preferences [9] [10], the judgments, the hierarchizations, the convictions and evaluations are observable and become indicators of values.

So, to infer values from the totality of the curricula archived, we have observed and analysed, in particular, the purposes of music education, the structuration and formalisation of these texts, the knowledge to be taught, the aesthetic references, the tools advocated to teach. Two main periods can be distinguished: from 1925 to 1977 [11], [12], [13] and [14], from 1977 to 2008 (year when the series 1995-1998 was applied for the last time) [15], [16], [17]. 1977 indicates a break in the way purposes are expressed. Although some concepts disappear, what they covered until then still remains during that series.

2. From 1925 to 1977, linear cumulative logic

When isolating the purposes uttered in each text and when treating them globally at first, we observe that 80% of the verbs are of the factive type. Moreover, the illocutory and perlocutory force of these verbs clearly shows an action from the teacher towards the pupils; “have them listen to” (1925), “train ear and voice” (1938), “have them appreciate, develop their taste” (1944-1960), “open up the children’s and adolescents’ minds” (1977), “have them appreciate artistic creation” (1995). The reference “teaching” is more often used than the term “pupil”.

We can conclude from these first elements that the system of values is transmission-oriented, teaching-oriented rather than learning or autonomy-oriented [18].

Table 1. Structure of curricula from 1925 to 1998

1925	1938	1943	1944	1960 - 1961	1963 - 1964	1977 - 1978	1985 - 1987	1995-1997	1998
<p>Arrêté</p> <p>1. Lulli Rameau</p> <p>2. 3 Bach Haendel</p> <p>4.5. France : opéra comique, opéras de Gluck</p> <p>6.7. Haydn Mozart</p> <p>8.9. Beethoven</p> <p>10. Influence de Gluck sur la musique dramatique française Méhul, Spontini.</p> <p>Influence de Rossini sur l'opéra comique et l'opéra français, Auber, Meyerbeer</p> <p>11. Le romantisme de Weber, Berlioz</p> <p>12. En Allemagne la symphonie, la musique de chambre et le lied après Beethoven et après Schubert. Mendelsohn, Schumann, Liszt Brahms</p> <p>13. Wagner</p> <p>14. En Italie après Rossini, Verdi. En France Gounod, Bizet, Saint Saëns, Franck, influence de l'école russe, Debussy</p>	<p>Arrêté</p> <p>1. Voix</p> <p>2. Lecture (intonation et rythme)</p> <p>3. Dictée (intonation et rythme)</p> <p>4. Solfège</p> <p>5. Chant</p> <p>6. Histoire de la musique (de Lulli à nos jours)</p>		<p>Arrêté</p> <p>1. Voix</p> <p>2. Solfège</p> <p>3. Audition (de la 5ème à la 4ème)</p> <p>4. Chant</p> <p>5. Histoire de la musique (de l'Antiquité à Franck)</p> <p>6. Auditions</p>	<p>Arrêtés</p> <p>1. Solfège</p> <p>2. Culture auditive</p> <p>3. Répertoire vocal</p> <p>4. Histoire de la musique</p>	<p>Arrêtés</p> <p>1. Culture vocale</p> <p>2. Culture auditive</p> <p>3. Solfège</p> <p>4. Répertoire vocal</p> <p>5. Histoire de la musique</p> <p>6. Audition</p>	<p>Arrêtés de 1977 (6^e-5^e) et de 1978 (4^e 3^e) :</p> <p>Introduction</p> <p>Culture vocale et chant</p> <p>Culture auditive, pratique du langage musical</p> <p>Culture musicale par l'audition d'œuvres</p> <p>Compléments à la musique (Danse, poésie, art dramatique)</p>	<p>Arrêté 1985</p> <p>1. Nature et objectifs</p> <p>2. Instructions¹</p> <p>2.1. Éducation de l'oreille</p> <p>2.2. Pratique et étude du langage musical. La pratique vocale .La pratique instrumentale. L'étude du langage musical</p> <p>2.3. Accès à une culture musicale par l'écoute des œuvres. Le principe de relativité. La situation culturelle actuelle.</p> <p>2.4. Activités d'invention et de création</p>	<p>Arrêtés de 1995 et 1997</p> <p>I - Chant</p> <p>A - Choix du répertoire</p> <p>B - Appropriation d'un chant</p> <p>II - Écoute</p> <p>III - Approche d'une pratique instrumentale A - Flûte à bec. B - Percussions C - Technologies actuelles</p> <p>IV -L'évaluation</p>	<p>Arrêté</p> <p>Compétences attendues à la fin du cycle d'orientation</p> <p>I - Interpréter de mémoire un répertoire vocal diversifié incluant éventuellement des éléments polyphoniques : Contenus, Compétences. Commentaires</p> <p>II - être sensible au discours musical, en sachant identifier ses principales composantes et leur organisation : Contenus, Compétences. Commentaires</p> <p>III - Réinvestir dans une pratique instrumentale les notions et les éléments du langage musical étudiés : Contenus, Compétences. Commentaires</p> <p>IV - Improviser, inventer, créer</p> <p>Évaluation</p> <p>Composantes et notions musicales de référence. Espace temps couleur forme</p>
	<p>Circulaire : chant choral</p>	<p>Circulaire</p> <p>1. Personnel</p> <p>2. Répertoire</p> <p>3. Enseignement</p> <p>4. Procédés</p> <p>5. Nuances</p> <p>6. Exécution</p> <p>7. Marches</p> <p>8. Chant de repos</p> <p>9. Meneur de chants</p>				<p>Circulaire 1977 :</p> <p>Enseignement de l'Éducation artistique dans les collèges</p> <p>Objectifs</p> <p>L'exercice de la sensibilité</p> <p>Le contact avec les œuvres d'art</p> <p>La création personnelle</p> <p>Instructions</p> <p>Annexes Ressources audio-visuelles et éducation artistique</p>	<p>1987 Compléments pour la sixième et cinquième. Méthodes et pratiques.</p> <p>3. 1. Écoute des œuvres :</p> <p>3.2. Éducation de l'oreille</p> <p>3.3. Activités d'invention et de création</p> <p>4. Évaluation</p> <p>4.1. Principes méthodologiques</p> <p>4.2. Exemples d'exercices d'évaluation</p>	<p>Accompagnement 6^e :</p> <p>I – Cohérence</p> <p>II – Espace</p> <p>III – Équipements (A. Chaîne hi-fi, B. Poste vidéo, C. Poste d'informatique musicale)</p> <p>IV – Chorale</p> <p>V – Évaluation</p> <p>VI - Environnement culturel</p> <p>Accompagnement Cycle central :</p> <p>I -Écoute</p> <p>II - Les pratiques instrumentales</p> <p>III - Contribution de l'éducation musicale à la maîtrise de la langue française</p>	<p>Accompagnement 3^e</p> <p>I – Pratiques vocales et instrumentales</p> <p>II – Un cycle d'écoute (Fiche didactique, Fiche pédagogique, évaluation, Document de travail de l'élève)</p> <p>III – Nouvelles technologies et musiques du XXe siècle</p> <p>IV – Pratiques vocales, instrumentales et créatives autour d'une chanson de variétés</p> <p>V – Un chemin pédagogique entre l'oral et l'écrit</p> <p>VI – Pratiques rythmiques</p> <p>Recommandations pour l'équipement de la salle</p>

¹ Les instructions sont communes aux quatre classes du collège.

The analysis of the integrality of the texts corroborates and completes that of the purposes: the references to the works of art, to music, to musical knowledge to be taught are far more numerous than the references to pupils from 1925 to 1978. For instance, in the order of 1925: the aim is to “*have them listen*”, explain what the masterpieces are, give “*the knowledge of the works of art*”. The criteria referring to what is considered as “*work of art*” from Lully to Debussy are mentioned with the use of high intensity modalisations : “*the penetrating charm of Bellini’s melodies*”, “*Méhul, the vigour and sensitivity of that great musician*”.

The work of art becomes value, its authority is indisputable: the “*great works of art*” mentioned were composed by “*masters*” exclusively belonging to composers of tonal, learned music from XVIIth to the beginning of XX century.

Then there is continuity in the texts from 1938 to 1964. Some changes can be seen in what is meant by music knowledge: from the only knowledge of works of art in 1925 we move to the practice of singing as soon as 1938, to an explicitation of the music phenomenon, based on scientific, technicist foundations (solfeggio, theory). The chronological approach of the history of music (from 1925 to 1964) is copied exactly on that of the teaching of history and literature: “*link the brief history of music to historical and literary studies*” (1944, 1960-1964). Aesthetic values are still clearly stated through the hierarchization of the repertoires gradually opening up to some sort of pluralism (“*French and foreign folklore*”), reference to “*jazz band*”, opening onto “*the unknown*”) without however going as far as eclecticism. This pluralism goes hand in hand with the taking into account of the wishes and emotions of pupils: “*It is recommended that pupils should discover by themselves and say what they like, what moves them in a melody*” (1944-1960). Nevertheless, the authority of the master is still there: “*have them appreciate music*” “*improve their taste*” (*ibidem*).

These sorts of knowledge are the same as those taught in specialised forms of teaching (the Paris conservatoire since 1795 and its branches afterwards) but also in the associative sector (male choirs, popular education) as well as in the first chairs in the history of music which have contributed to the implementation of musicology in France (1904-1951).

Therefore, from 1925 to 1977, the various sorts of knowledge are superimposed according to cumulative logic (like in history or mathematics) reminding of the positivist conception. Particularly, as regards the history of music, solfeggio, singing, the representation of knowledge is linear even teleological. Strong historic determinism prevails.

3. Cultural opening, dehierarchization in the curricula from 1977 to 1978

From the 1977 series onwards, the tendency to teaching rather than to learning is counterbalanced by the use of the verb “*open up*” (which reminds of the tendency to pluralism already appearing since 1944). For example, we can read: “*the aim of music education is: opening up the children’s and teenagers’ minds to the conscious perception of the world of sounds, of timbres and rhythms [...] encouraging their need for expression through singing or through the use of very simple instruments [...] preparing their creativity [...] have them feel the wish for a direct communication with the world of sounds*” (1977). More and more often the “*needs*” “*the wishes*” “*the creativity*” of pupils are taken into account. Other factive verbs along with substantives testify to the musical practice by pupils: “*encourage their need for expression through singing or through playing very simple instruments*” (1977)

The purposes of this 1977 series from then on testify to the fact that the subject pupil is gradually becoming more important even if the “*denivellation*” [19] between teacher and pupil remains written until 1998. Sensitivity and practice (expression) prevail over knowledge: “*it is important to feel at first, then to understand, finally to learn*”. What has become of the works of art to be taught, which until then had been authoritative like the great narratives?

In the two orders concerning this series, the most often used reference is for the first time “*culture*” instead of “*work of art*” (1925) or even of “*singing*” (1944), or of “*music*” (1964).

Culture would then replace the cult of the work of art. It is corroborated by the absence of titles of works of art and by very few mentions of composers (only J.S. Bach and L.V. Beethoven are mentioned in years 9 and 10). If knowledge still seems to be there implicitly, the recurrence of the substantives “*auditive culture*” “*vocal culture*” tends to show a dilution of the cult of the work of art into a more globalizing generalizing culture. The lack of “*aura*” of the works of art [20] is beneficial to the teacher who is free to choose the works of art he wants to teach. This excerpt from a complementary order testifies to it: “*It is in a spirit of liberty and progressivity that the general orientations described in the official texts relative to music education will be implemented*”. This loss benefits as well to the practice by pupils (be it vocal or instrumental, the latter being new), benefits to their creative possibilities (*cf.* the paragraph on the pupils’ personal creation but which remains vague).

We observe that the term “*solfeggio*” disappears and is replaced by “*musical language*” operationalized in instrumental practice; but the

knowledge that the solfeggio covered remains. “*The history of music*” disappears as well from the titles of paragraphs. The notion of chronology which went hand in hand with that of the history of music, disappears in years 7 and 8 (“*we learn how to listen to the works of art from all times and origins*”). Chronological approach appears again in years 9 and 10 testifying to the hesitations of the legislator concerning a linear or non linear approach. The writers then resolutely move away from the musical social reference practices conveyed until then by the specialised teaching of music in France. These texts show that a real epistemological break is taking place.

4. From 1985 to 2008, relativism, constructivist representation of knowledge

The tendency observed in the analysis of all the corpuses before 1977-1978 is inverted in the texts of 1985, 1995 and 1998: the word “*pupil*” recurs more often than the words concerning musical knowledge. Thus, in 1985, we can read: “*artistic teaching develops in pupils personal creation [...] sensitivity and intelligence. They enable them to have access to the world of arts and to personal creation. They lead them [...] to expression and communication through images, sounds, gestures*” In the order concerning years 7 and 8, it is written that: “*the purpose of music education is to help pupils situate themselves in a world of sounds more and more diversified [...] to satisfy and develop their need for expression and for communication, to stimulate their imagination and inventive spirit*”. Or even ten years later in the 1995-1998 series: “*it is the duty of music education to give the means to grasp this means of expression*”, “*by confronting their practices with the works of art [...], pupils can give meaning to what they are doing and situate what they are learning*” (1995)

These purposes mean that the advent of the situated pupil-subject approach is still there, that both in 1985 and in 1977 there is primacy of sensitivity and practice (expression) over knowledge: “*first to feel*”. Opening up to non occidental cultures; pluralism takes on more and more importance. This opening up goes along with the giving up of hierarchy in the repertoires. One paragraph devoted to the “*principle of relativity*” states it more particularly in 1985 (years 7 and 8 curricula): “*Music education, which must not impose anything and which must not exclude anything aims at opening new horizons, at creating other encounters and at giving enough landmarks to encourage pupils to discover by themselves.*” The pupils are guided in their discoveries by vocal and instrumental interpretation practices, by invention practices. So, these texts become the

representatives of a constructivist representation of knowledge.

In the 1998 curriculum (year 10), the list of competencies being expected, the paragraph on evaluation (already there in 1985) the cultural landmarks replacing the history of music reinforce the impression of a notional, transversal approach less oriented towards the knowledge of a precise musical patrimony. The official texts and curricula seem to have moved away from historic determinism.

5. Conclusion

To sum up the ideas expressed in this paper, the reader can refer to the Table 1: it recaps the structure of each text analysed.

Between 1925 and 1977 the curricula testify to a transcendental conception of values (imposed by an external authority) through purposes and hetero structuring knowledge (works of art, history, solfeggio). On the contrary, from 1985 to 1998 (this last order being in use until 2008), we deal with an imminent conception because of the auto-structuring purposes (thanks to the pupils’ musical practice, expression, invention and thanks to the teacher’s freedom of choice) [21], [22]. In other words, before 1977 the legislator is in line with the “*teacher-centered*” pedagogical trend whereas after 1985 he lies within a more “*student-centered*” trend [23]. Three series of elements can explain these sets of values.

If we take the example of the series 1977-1978, links between the emerging values of these curricula and the specific history of music education as a school subject can be observed: the appointment of Chief Inspector Marcel Landowski in 1975 who as soon as 1968 opposed the ideas of the previous General Inspector Georges Favre about the solfeggio and the history of music that he found “*harmful*” (May 3rd 1968) can explain the disappearance of these two categories of knowledge [24].

The history of the education system and of the other school subjects, the political ideas can also play a part in the values conveyed in the texts that we have just analysed: the debate between historians which divided Michel Debré Minister of Education in 1960 and the upholders of a non linear history seems to have pervaded the ideas of the writers of the series 1977-1978. Paul Ricoeur advised to move away from historical determinism (the idea of an after necessarily coming after a before). He developed the concept of “*défataliser*” (taking history out of fatalism) that is to say moving it away from a too linear vision of history as meant by the notion of “*time’s arrow*” [25]. Besides, relativism and the opening up of the curricula of 1977 remind us of the democratic stakes inherent to post modern mutations whose

emergence dates back from the 1970s. The need for urgent educative and pedagogical renovation, the revision of the purposes and of the conception of school that the colloquium of Amiens in March 1968 yearned for, can be observed as well in the texts: “it is important that one should move away from an exclusively intellectualist and encyclopaedic conception of culture” [26]. This is what these texts say: culture “by” “and” the practice of the instrument and of singing.

At last, the social context, the musical “active” methods developed all along the century as well as research in the fields of psycho pedagogy, among others, may also have influenced the writers of these texts.

Let us note that there is not necessarily any mechanical correspondence between these texts and the contexts in which they appeared.

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Violence in Schools: Student Perceptions of what Constitutes a 'Safe School'

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Abstract

This study examined the relationship between secondary school students' perception of their likelihood of victimization and the school environment. Student responses (N= 1550) to the Safe Schools Survey showed that students who were more frequently victimized in a high conflict school were more likely to be having academic difficulties, view their school as an unsafe place within which to learn, and view staff as less interested in insuring their safety while at school. Low conflict schools were perceived by students as being places in which they could call on staff for support and where they had a direct effect on the safety of their school. Additional findings related to academic success of students in a high versus low conflict school as well as the type of victimization they were likely to report. The findings are discussed in relation to program needs in two different conflict schools.

1. Introduction

Bullying is the use of physical, psychological, or verbal means of causing physical or psychological distress to others. And, there is evidence suggesting that school victimization rates are escalating. Bibby [1] reports that youths who perceived violence in schools as a very serious problem increased from 36% in 1992 to 50% in 2000.

Perceiving the school as unsafe due to the threat of violence has been linked to anxiety and phobic responses, harm to students' mental and physical health, and ultimately to the avoidance of school altogether. Reynolds [2] suggests that if students fear for their safety, they may avoid areas of their life in which their safety is threatened. When the setting being avoided is school, students' learning and their pursuit of an education is compromised. The National Center for Education Statistics [3] noted that victims of bullying were more likely than non-victims to report receiving failing grades.

Low perceptions of safety in school is reflected in some students adopting self defensive strategies such as carrying weapons and developing an aggressive stance to reduce the danger and lower

their risk of victimization [4]. Schools in which students perceived the rules to be fair and clear were found to have less student victimization compared to schools in which rules were not perceived as such [5].

Student coping strategies have also been found to distinguish non-victims from on-going victims of school violence [6]. Two types of coping strategies have been noted in the literature. Internal coping strategies include the development of positive self-esteem, and assertiveness. External coping strategies include establishing social support and anti-bullying policies in schools found that children who became long-term victims of bullying were more likely, compared to children who escaped being a victim, to be depressed and lacking the social skills to effectively relate to peers [6], [7]. Other coping styles found to be more common among long-term victims included not talking to somebody about the incident, ignoring the incident, not attempting to make new or different friends, running away, and using emotion-focused coping strategies [6], [7], [8]. Long-term victims of bullying compared to escape or non-victims cope passively, reflected in a learned helpless style of coping. Such passive coping strategies are associated with poorer overall well being. The ability to establish positive social support, a more active coping strategy, is an important protective factor against victimization and its consequent negative effects [9], [10]. For example, having a reciprocal and trusted friend has been shown to be a protective factor against victimization [11], as cited in [12].

2. Impact of the school environment

School environments characterized by high rates of violence are perceived as less likely to have positive social support and fewer resources available than schools with lower rates of violence. Smith et al. [7] suggest that victims ignoring the bullying might actually be employing a successful strategy in school environments that are unsupportive of the victim's distress or do not provide social support. Victims may not perceive a social network to which

they can reach out, and are therefore less likely to seek assistance to buffer the effects of bullying.

The present study investigated how the school environment contributes to a differential understanding regarding how students perceive safety within their schools.

3. Design

This study used a cross-sectional Analysis of Variance (ANOVA) design, with school environment and peer victimization as the independent variables. Participants included 1703 secondary school students who completed the *Safe Schools Survey*¹ in the 2004-2005 academic years. 851 students attended a secondary school that was characterized by higher rates of violence, and 852 attended a secondary school that was characterized by lower rates of violence.

4. Results

4.1. Perception of Safety

Among the working assumptions related to this study was that student's perceptions of their safety in school is an important factor in teachers and administrators planning for anti violence policies and practices.

Students from the school with higher rates of violence were significantly less likely to endorse items related to: seeing their school as having a positive school climate and being a safe place in which to learn. Schools with lower rates of violence follow the school code of conduct, believe that staff think the safety of students is important, view school as having a caring, respectful atmosphere, are willing to report bullying incidents to school staff, identify and have knowledge regarding how to report incidents of bullying, believe they have a role in preventing bullying and have the skills and knowledge to intervene appropriately when bullying occurs.

4.2. Academic Qualities

Academic information was obtained regarding the two schools based on the results from the Ontario Secondary School Literacy Test (OSSLT) from the Education Quality and Accountability Office (EQAO) assessment report in October 2004. Information from this report was based on 295 first-time eligible students at each of the two schools. Based on this report, the school with higher rates of violence compared to the school with lower rates of

violence had: a higher percentage of students in the applied stream (40% vs. 2%, respectively), a lower percentage of students in the academic stream (53% vs. 96%, respectively), a higher percentage of students in the Special Education and ESL programs (11% vs. 1%, respectively), and a lower percentage of passing rates on the OSSLT (72% vs. 96%, respectively). Thus, the school with higher rates of violence was characterized by a higher proportion of students in the applied stream, a lower proportion of students in the academic stream, more students in Special Education and ESL programs, and a lower passing rate for the OSSLT, compared to the school with low rates of violence. These differences serve to further differentiate both schools on the basis of their academic make-up.

4.3. Victim Status

Responses to one section of the survey provided information about students' victim status by assessing the type and frequency of students' self-reported bullying experiences. Each item assessed a different type of bullying experience including physical, verbal, social, and sexual bullying. Sample items included "have you been; physically bullied, verbally bullied, socially bullied, sexually bullied, etc.?" Participants responded on a 5-point Likert scale indicating the frequency of each type of bullying experience (i.e., "daily", "weekly", "monthly", "seldom", or "never"). Following analysis of this section, respondents were classified into the never/seldom, moderately or frequently victimized group based on a pre-determined criteria. Those who reported a score of either 1 or 2 ("Daily" or "Weekly", respectively) on at least one of the items assessing bullying incidents (i.e., "Have you been: verbally bullied, physically bullied, socially bullied, sexually bullied?") were classified into the frequently victimized group, while those who reported a score of 4 or 5 ("Seldom" or "Never", respectively) on all of the incident items were classified into the never/seldom victimized group. The remaining respondents were classified into the moderately victimized group (i.e., a score of 3 "Monthly" on any of the incident items) but the responses from this group were not analyzed, because only the extreme groups (i.e., never/seldom and frequently victimized groups) were compared for this study.

Out of the 1703 respondents, 67.9% (N=1156) were in the never/seldom victimized group, 9% in the moderately victimized group (N=153), and 23.1% (N=394) in the frequently victimized group. Participants were also classified by the nature of victimization experienced and their school environment. Students who reported being bullied "Daily" or "Weekly" (and hence were in the frequently victimized group) were most likely to report verbal bullying (44.2% in the school with

¹ The Safe Schools Survey was developed by the Thames Valley Board Of Education. A copy can be obtained form the third author.

lower rates of violence and 40.3% in the school with higher rates of violence). The second most frequent form of victimization reported for both schools was social in nature (24.2% in the school with lower rates of violence and 26.8% in the school with higher rates of violence). For the school characterized by lower rates of violence, victimization of a physical and sexual nature were the third most frequently reported forms of victimization (both types at 15.8%), and for the school characterized by higher rates of violence, sexual victimization was the third most frequently reported form (17.8%) followed by physical victimization (15.2%).

5. Discussion

5.1. Victim Status

Relevant findings from this study focus on the importance of differentiating school-based interventions for bullying accounting for the extent to which students feel vulnerable and unsafe while they are at school.

Students who are the frequent victims of bullying will need guidance to help them develop a repertoire of adaptive strategies. For example, the psychoeducational group model for victims of bullying called Solving Problems Together (SPT), may be more in tune with this group since it involves a counselor working with a small group of student victims helping them develop critical thinking and problem-solving skills [13].

5.2 School Environment

Partially consistent with previous findings in the literature that a school environment characterized by higher rates of violence contribute to a passive, learned helpless way of coping, students in the present study from a school with higher rates of violence were significantly less likely to tell a friend that they were being bullied and less likely to use the skills they learned to deal with the bullying, compared to students from a school with low rates of violence. As suggested in previous literature, a school environment characterized by higher rates of violence might not be supportive of victims' distress nor have the appropriate social support readily available [7]. In the current study, a school environment that had higher rates of violence, which was characterized by significantly lower ratings of perceived safety in school by students, had a greater proportion of students who reported higher levels of victimization, a higher failure rate on a province-wide literacy test, a greater number of students in the applied versus the academic stream, and a higher proportion of students in special education programs. It was also found to be an educational environment that was less conducive for students to reach out to

peers for social support and to use skills that were learned to deal with the bullying, compared to a school environment with lower rates of violence. However, inconsistent with the findings in the literature that a school with higher rates of violence is associated with a more passive and learned helpless manner of coping, students from the school with higher rates of violence in this study were also significantly more likely to report that they would tell the police, talk to a trusted adult in the community, and call a hotline regarding the bullying, compared to students from the school with low rates of violence.

In a school environment characterized by high rates of violence, the problem of bullying might also be so severe that it is beyond the ability of the student to handle it themselves, requiring more strict and obvious forms of management reflected in using static strategies. Kasen et al. [13] have suggested that schools that are characterized by a higher number of inter-student conflicts tend to make it difficult for each student to function adaptively and focus on academics. This could make it difficult for students to learn how to cope with bullying using the skills they have learned along with other more relationship-based dynamic strategies. In addition, a school environment with higher rates of violence could be more conducive for students to externalize and blame the school environment for their being bullied, which could lead them to seek more external solutions reflected in static strategies. Schools characterized by lower rates of violence might be able to provide the resources and programs along with a conducive environment in which to learn and implement dynamic strategies. These schools might also be more conducive for students to internalize the cause of their being bullied, since bullying does not appear to be a problem amongst most students in this type of environment. These students might be seeking more internal solutions, such as dynamic strategies, that could resolve bullying. These findings imply that the school environment plays an important role in how students cope with victimization through providing them with the resources and skills they can use and the appropriate context in which to deal with the bullying effectively. Thus, it will be important for school administrators to consider high-conflict schools as priorities for funding for programs that could help all of their students develop effective problem-solving skills to improve their well being in and outside of school.

5.3. School Environment as a Moderator of Victim Coping Strategies

It was hypothesized that the school environment could moderate the effects of victim status on coping strategies, with students who were frequently

victimized in a school with higher rates of violence coping more passively than if they were in a school with lower rates of violence. Partially consistent with this hypothesis, this study found there was a trend such that in the school with higher rates of violence, students who were frequently victimized were less likely to report that they would approach the bully compared to those who were never or seldom victimized. In the school with lower rates of violence, there were no differences between the students on this strategy. Previous research has suggested that victims of bullying in secondary schools where a peer support system has been established were less likely to ignore the bullying and more actively engaged in doing something about it [9]. However, the current study also found that in the school with lower rates of violence, students who were frequently victimized were significantly less likely to talk to a parent, tell the teacher, and talk to a trusted adult in the community about the bullying, compared to those who were never or seldom victimized. It was predicted that in a school environment characterized by lower rates of violence, there would be similar resources available to all students, so that little or no difference was expected between students who were frequently victimized and those who were never or seldom bullied in terms of how they coped.

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Educating for social cohesion in plural societies: The ethical basis

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Abstract

A BBC news report on a recent demonstration by a socio-political group in Malaysia on perceived racial and religious discrimination; 'people live side by side but most people will tell you that they do not share their lives'.. In countries with plural societies where there are differences in values due to the different ethnic and religious backgrounds of the people, the issue of education and social cohesion is one of the central focus of educational policies. The need to focus on social cohesion raises the issue of educating for social cohesion and what it means.

1. Introduction

In Malaysia the multiethnic, multireligious and multicultural nature of its society and the conflicts and disagreements in terms of beliefs, values and practices demands some sort of education that is able to bring people to live together in a meaningful manner, that is, in an open and sincere manner devoid from impartial, discriminatory and exclusive attachments that divide society along racial or ethnic lines.

One policy that has drawn criticisms from its inception/introduction in 1983 is the policy of offering Moral Education only to non Muslim students and Islamic Education to Muslim students (and others who are interested) as one way of educating for social cohesion based on the idea of shared values. However, this has continued to raise serious questions about how education through these subjects can successfully bring members of society together as one people. This is because the policy on these subjects clearly seems to segregate the students along religious and ethnic line, that is, Muslims and non-Muslims; Malays and non-Malays. These concerns came to a head and resulted in the formulation of a new subject, Civics and Citizenship which is compulsory for all students in 2004. Such a move is similar to that in the United Kingdom where Citizenship Education was offered as "a unifying force enabling people from different beliefs and backgrounds to live together in spite of widely differing allegiances, opinions and tastes" by focusing on educating pupils to be critically informed citizens who can actively participate and take action for the betterment of themselves and

society [4]. However, it is questionable as to how far it can do this considering its multicultural society and the thin line the subject has to walk between political literacy, a cohesive society and the idea of a

British identity. Although the case in both United Kingdom and Malaysia may be different but in reality are they are same in terms of the question they pose. Both cases raise questions about what education for social cohesion should be and what we mean by social cohesion. In this context, the questions are underpinned by the issue of what ought we to be educating for in a much deeper sense.

This paper seeks to address this question and the related issue from a philosophical perspective by arguing that the issue of education for social cohesion in particular educating for social cohesion requires an examination or in some cases a re examination of the ethical basis for this. This claim is made within an understanding of education for social cohesion as educating pupils to live together in an open and sincere manner where a person's preciousness is affirmed on the basis that he is a person and not on the basis of his or her particular values or set of values. This paper further describes the problem of social cohesion and the issue of the kind of bond that should hold us together. Then it questions the educational issues within the context of plural societies in approaching this issue namely the ethical basis for it. Finally, proceed to consider what should be the ethical basis and conclude by suggesting a possible ethical basis.

2. Literature Review

Parts of the argument in this paper is located in the discussion and research by Green and Preston [3] on education and social cohesion that relocates the debate on social cohesion specifically the need to refocus on social cohesion at a societal level; some part of which suggests that in considering education and social cohesion we need to consider the ethical basis of our bond with others. The argument is also located in the discussion on social cohesion in literature on social theory and social cohesion that raise questions about individual attachments to society whilst neglecting the more fundamental question about the basis of our relationship with others. The argument also situates itself in the wider arguments about pluralism, multiculturalism,

diversity and education in the context of plural societies and the ethical basis of education in those contexts. A large part of the fundamental argument on the ethical basis in educating for social cohesion comes from my arguments in the context of reframing moral and citizenship education in Malaysia [5]. It can also be argued that this to a certain extent in my unpublished paper was mentioned in the context of global ethics and cosmopolitanism [6] as well as published material relating to the notion of others for moral and citizenship education [7].

It can be suggested that the ethical basis of our bond with others is both timely and relevant to be addressed within the wider discussion on education and social cohesion specifically in the context of education for social cohesion through subjects such as Moral Education in Malaysia and Citizenship Education in the United Kingdom.

3. Outlining the problem

In the context of this paper, social cohesion in plural societies refers to the bond that holds people together in our everyday relationships, whether in the family, with friends, at work, or in the society we live in. A common charge against plural societies is that there is no real bond that holds people together despite the differences in their beliefs, values and practices [5]. For example, in Malaysia, people with different beliefs, values and practices have on the whole lived peacefully with each other but observers and social commentators note that there is no genuine bond between them. We have largely been tolerant of each other's differences but we do not value each other in a way that suggests that the other exists in any significant sense [5]. What we lack is a bond that rests not just on respect for the other. It should rest on a deeper evaluation of other that offers the other the same moral standing as us. In this context, toleration is something that has failed to provide this kind of moral standing. What toleration affords is only a sense of equal moral standing to others where equal here is only recognition that they should be given similar treatment or similar goods but does not go further and affirm them as persons qua the preciousness of persons.

Our relationship with others in plural societies can lack depth, seem superficial and lacking in sincerity. We get along with others; work with them, live next to them, even play with them but don't really trust them and would prefer someone who has or shares the same beliefs, values and practices. The bond is fragile. We can form all sorts of bonds with others. For instance, we can be friends with them, can be married to them but not really be bound to them in any significant sense; we do not care for them in a deep sense that goes beyond these specific relations such as friends and partners. They are more

descriptive bonds than genuine normative bonds that hold people together. Genuine normative bonds are those bonds that are embedded in much more than just who a person is but what that person means to us in a deeper sense.

Most of the problems of social cohesion are often discussed in relation to or arise from, our relationship with people from diverse backgrounds. In these relationships, there are some areas of conflict and disagreement on values or sets of values. Some of these are irreconcilable due to the incommensurability of the values that underpin the conflict and disagreements. A good example is the case of the burqa in France [8] and the issue of the status of these women as the wearing of the burqa is taken from one perspective as the subjugation of women and from another perspective as liberalising women. Although both refer to equality of women but they are cannot be compared and the idea of equality here stand in conflict with each other. In this context education specifically, education for social cohesion, is seen as key to correct or overcome such conflicts and disagreements.

A central question here is what are we educating for through these subjects? If it is social cohesion: what do we mean by social cohesion? Without a clear idea of social cohesion, framing educational policies for the purpose of social cohesion, for example through the introduction and teaching of subjects such as Moral and Citizenship Education in Malaysia and Citizenship education in UK, may not go far in providing the dispositions and attitudes necessary to live together meaningfully. What is needed is not only a proper understanding of such education but more importantly providing a cogent ethical basis upon which such education is based, that is, an ethical basis for living together. Therefore, an even more pressing question in educating for social cohesion is the ethical basis for it. Why should we live together in a cohesive manner? Is it because we're morally obliged, is it an obligation we owe to other people especially in a plural society or is it because we are the same in some deeper sense? Further, we need to question if living together in a cohesive manner is only to the extent of being unified – together in a very superficial sense or should it be on a much deeper level.

We can say that the problem of social cohesion rests in the kind and nature of the bonds specifically the attachment we have with others. One of the problems is the lack of strong attachments with others of different beliefs, values and practices where such attachments are more likely to be based on some commonality. One example, would be sharing a similar religion or being from the same ethnic group. In such cases, attachments are narrowly understood and do not extend to attachments with, say those of a different religion. Even if they do extend, the attachment is fragile and not on the same

basis as those attachments with their own "kind" – those who share similar values. Sometimes these attachments if they extend to others, are considered burdensome, obligatory and seem to be imposed for the sake of the other's sensitivities or needs and tend to cause 'moral heartache' that is, "I ought to but...". In addition, the normative and evaluative basis for such attachment is often toleration where toleration is seen as a virtue. The idea here being that "good citizens tolerate others beliefs, values and practices". Hence, the attachment is not strong and is only on the surface. There is no sense of genuine respect for others. This problem of social cohesion raises several questions of a general nature as well as more specific ones particular to education. In educating for social cohesion the questions centre on the aims, content, attitudes and disposition that we need to educate for. Here we need to address who are others in relation to us, our relationship with them and the ethical justification for this relationship – this bond. If we examine those problems again, they suggest that in educating for social cohesion in plural societies, we must first explicate the ethical justification for living together with others in an open and sincere manner. What is the ethical justification for us to consider the other and act justly and show a deep sense of care towards them? Is it an ethical obligation or does the justification lie in something deeper? These questions are often asked; sometimes directly, sometimes indirectly. For example, when we hesitate to help others; seek confirmation as to why we must help them or when we question their place in society and why we should we consider their welfare or their well being together or in some case over our own well-being. Together with these questions comes the uncertainty, the lack of trust and the suspicions that make us look at others not as people with whom we share a country, but as someone whom we should fear and distrust and question as to their place in society. In this context, the ethical justification for us to bond with others and to underpin our attachment to them is important for several reasons. First, it provides us with a motivation to consider their well being and welfare, second it is the basis upon which we can all agree upon avoiding the need to find particular reasons or relationships that allow us or compel us to act ethically in the context of others in society. The ethical basis that cuts across the difference in our values, appeals to all irrespective of their ethnicity and religion and goes beyond just the ties that hold us together and in a deeper sense allows us and motivates us to consider their well being and ours in a more substantive sense; not differently not similarly but on the basis of common humanity.

4. Contribution to Knowledge

The ethical basis lies in the concept of common humanity and the idea of the preciousness of persons qua Gaita [2], and centres on affirming persons rather than their differences. In the context of educating for social cohesion, educating for affirmation of others as persons situates the relationship sought in a cohesive society in our shared vulnerability that is, our vulnerability for suffering and happiness amongst others. This notion of a shared vulnerability when applied to the concept of social cohesion particularly in the context of educating for social cohesion situates the bond in our humanity. This provides a cogent basis not only for living together in a plural society but in terms of education a basis that is possibly not controversial. In educating for social cohesion, a possible ethical basis in educating for social cohesion ought to be one that considers others and our relationship with them beyond the differences in our values [5]. If we consider others on the basis of the differences in our values or for that matter, on the similarities of our values; than our ethical attachment to them is more likely to be thin – superficial. It would require us to sacrifice our values for others and accept values which we may disagree with or cannot be reconciled with our own idea of good. However, if we consider others beyond the differences in our values than the ethical basis for our attachments would be thick. Our attachments would locate itself on our commonality rather than the common values we may share or a value we subscribe to in common required (by authority) to overcome the differences in our values and live side by side without any genuine sense of cohesion. What if there was no commonality; than it would be difficult to find a common ground.

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Session 3A: Teacher and Adult Education

Investigating the Perceptions of Effectiveness by Special and General Education Teachers in the United Arab Emirates (UAE) (AbdelAziz Sartawi)

Parents as a family vocational adviser for children
(María José Rodríguez Malmierca, Manuel Gromaz Campos, José Manuel Abuín Mosquera)

Filial Responsibility and Guilt – Discourses of Eldercare of Parents by Middle-aged Children
(Ilse Eriksson)

Stepping into the Light: One State's Journey towards Transparency and Accountability in Teacher Education Review Process (Michael J. Smith, Mifrando Obach)

Adaptation of the Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R) to the South African context (Zelda Wasserman, S.C.D. Wright, T.M.M. Maja)

Investigating the Perceptions of Effectiveness by Special and General Education Teachers in the United Arab Emirates (UAE)

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Abstract

Reform cannot take place without reforming the educational sector. In order of educational reform to take place, academic progress of students is a key issue. A critical factor in students' progress is effective teaching. In fact, the single largest factor that affects academic improvement of students is teacher effectiveness [7]. Without effective teaching, students will fail to achieve adequate academic progress. According to the published report by The Teaching Commission [10], teaching is at risk and the only way to improve the nation's global competitiveness is through improving the teaching quality. There is a direct relationship between teacher effectiveness and students' academic achievement. The goal behind teacher education programs is to prepare future teachers to work effectively with students with disabilities [1]. Quality of teaching is more important than quantity of teaching. Quality of teaching includes effective use of time, providing feedback, guiding students, and encouraging them to learn. Teaching in small groups and one-on-one teaching also enhances the quality of teaching [9].

1. Introduction

The effective teaching has been described in terms of specific instructional practices such as applying systematic teaching procedures and spending more time working with small groups. In addition, effective teaching can be operationalized by modifying teaching

according to a student needs or by carrying out different types of assessment [5]. In other words, effective teaching is conditioned on students' characteristics. On the other hand, teaching effects are observable variables and can be characterized by gender, years of experience, degree obtained, teachers' salary and verbal ability. It is also important to underscore the fact that a teacher effect is not always translated in effective teaching. For example, a teacher with high salary may not necessarily mean he/she is an effective teacher [3]. Research in the area of teaching effectiveness acknowledges the fact that effective teaching enhances students' learning. However, most of the recent research does not seem to define what is exactly teacher effectiveness or the difference between teacher effectiveness and teacher effects. In fact, these two terms are completely different and should not be confused. Ding and Sherman [3] warned against equating these two concepts not only because they have different meanings, but also for their different instructional implications. The authors also stated that mixing the two terms will lead to misconceptions about professional development and hence lead to false implications for instructional practice. Furthermore, the authors stressed out that the dynamic aspect of the learning process and the fact that students should be seen as active participants in the learning process rather than mere recipients of knowledge. In the 1970's some researchers tried to establish a connection between behaviours of teachers and the achievement of the learner. The conclusion was that the

achievement of the learner increased when teachers systematically structured their behaviours [2]. Researchers stated that the most effective strategies for the optimal learning to occur were when teachers and students were matched cognitively. Other researchers tied the achievement of students with factors such as the amount of time the teacher spends in helping the students in developing, executing and revising plans. In addition, the achievement of the students increased when there is a shared interest with the teacher, shared personality characteristics with the teacher and a similarity in communication modes with the teacher [2]. Furthermore, it was stated that the combination of knowledge in content and theories and the ability to utilize teaching methods is what makes effective teacher. More recently, a useful educational model was proposed to study the relationship between teaching effectiveness and student achievement on tests. The strength of this model is that it is a multilevel model of school, classroom, and student with several variables [4]. However, the weakness of this model is that it does not have a clear definition of teacher effectiveness and lacks the explicit description of the dynamic interactive process between students and teachers. The dynamic nature of the learning process is crucial when examining teaching effectiveness. Students do influence their own learning and hence play a major role in their teachers' effectiveness. Following Odden et al. model, a "multilevel interactive education model" that explicitly explains the dynamic nature in the interactive learning process between students, teacher and school was proposed by Ding and Sherman [3]. The strength behind this interactive model is that it differentiates between teacher effects and teacher effectiveness and holds students equally accountable for their learning. Other researchers found that resource room teachers characterized by organization, fairness, enthusiasm, and clarity in

instruction were high in personal efficacy. Those teachers who were high on personal efficacy were also inclined to employ different approaches, learning styles and materials [6]. The College of Education at the United Arab Emirates University (UAEU) has undergone major changes in restructuring its programs [8]. In pursuit of continuing development, the College of Education at UAEU has adopted and integrated international organizational standards to improve its programs. Therefore, the current study attempts to identify the skills that constitute effective instruction in order to incorporate them in all of its programs. The purpose of this study is to examine both special and general education teachers' perceptions towards effective instructional practices in the United Arab Emirates. Specifically this study aims at: (1) comparing type of teachers (special and general education teachers') perceptions of effectiveness in their instructional practices in terms of planning, management, teaching and evaluation (2) Effects of experience on teachers perceptions of effectiveness in their instructional practices in terms of planning, management, teaching and evaluation and (3) Interaction effects of types of teachers and experience on instructional practice in terms of planning, management, teaching and evaluation.

2. Methodology

2.1. Sample

The sample of the study consisted of 106 female special education teachers and 157 female general education teachers. All participants in the sample held a University degree in either special education or elementary education. Years of teaching experience for the special education teachers ranged from less than two years to 18 years and more.

2.2. Instruments

The questionnaire of instructional practices was used. This questionnaire is based on the Ysseldyke and Algozzine Model of Effective Instruction (MOEI). The questionnaire included 63 instructional and management practices organized along four areas of teacher behaviour. Participants were asked to rate each item of the four subscale (planning instruction; managing instruction; delivering instruction and evaluating instruction) on a four point Likert-type scale in regard to the frequency of their use. Ratings ranged from 1 = not at all to 4 = always:

- *Reliability* of the total instrument yielded a coefficient of .84; .85; .83; .83 for the subscales.
- *Validity*: The questionnaire was translated and given to six faculty members in the special education department at the United Arab Emirates University and fifteen special and general education specialists (e.g. teachers and supervisors) for revision.

Their feedback was taken into consideration and a number of items were omitted from the demographic data and a number of items were reworded for clarity. Further, the Pearson's correlation coefficient was used to examine the relationship of the scores on each item and the total score of each standard. The results of such correlation were both valid and significant.

2.3. Administration

A total of 400 surveys were sent to students from the college of education at UAEU who were student teachers at the time of the study. They were asked to distribute the surveys with a letter assuring teacher's confidentiality. A total of 300 surveys were returned. Out of the total returned surveys, 37 of them were not

included in the study because of missing information. The final sample that was used in the study included 263 participants, which represents about 66% of those distributed.

3. Results and Discussion

In alignment with the recent shift in education in the UAE towards inclusion, it is important to determine perceptions of both general and special education teachers towards their own performances. It is the first step that would help to reform the educational system in the country. Moreover, the result of this study could help make decision about the necessary changes in both pre-service and in- service training programs. Results show that the perceptions and effectiveness of general education teachers was highest in the area of planning instruction with a mean of 2.29 (SD = .53), and their perception of effectiveness was at its lowest in the area of evaluating instruction with a mean of 1.85 (SD = .19). For the special education teachers participating in this study, the highest perceptions of effectiveness was in the area of delivering instruction with a mean of 3.21 (SD = .69). However, their perception of effectiveness was at its lowest in the area of evaluating instruction with a mean of 2.38 (SD = .46). The overall mean of the four areas was 2.97 (SD = .59) for special education teachers and a mean of 2.05 (SD = .24) for the general education teachers. Findings of perceptions of all teachers in using effective instructional practices revealed that they did not perceive themselves to be using effective instructional practices as often as would be expected. The main scores for most of the components of effective instruction examined were around 3.0 for special education teachers and 2.0 for general education teachers on a 4-point scale. The lowest scores were obtained for the component 'evaluating instruction'. Despite teachers perceptions of using effective

instructional practices is above the average in both groups, yet it is expected that they would score higher. Independent T-test was used to investigate the significant difference of means of effective teaching between special and general education teachers. Results indicated a significant difference between the two groups in the area of planning instruction ($t = 11.10$, $df = 261$, $p < .01$), the area of managing instruction ($t = 16.81$, $df = 261$, $p < .01$), the area of delivering instruction ($t = 17.32$, $df = 261$, $p < .01$) and in the area of evaluating instruction ($t = 12.74$, $df = 261$, $p < .01$). This result is expected since special education teachers are usually trained to prepare and implement individualized educational programs which include practices related to differentiated instruction and assessment. Therefore, it is expected that instructional performance of special education teachers will highly exceed their counterparts from the general education field. Results of types of teachers might be explained based on misplacement of students with special needs in UAE. Those students are usually misdiagnosed due to lack of formal assessment batteries [8]. Some students with learning disabilities, for example, might be falsely categorized as students with mild/moderate mental retardation. In overall, special education teachers perceived themselves to be significantly more effective than general education teachers. In the component of 'evaluating instruction', means were low for both groups. However, for the special education teachers, the mean were significantly higher. This could be mainly due to the fact that the majority of special education teachers were trained to use different instructional methods to meet the needs of all diverse children in their classrooms. Two-way ANOVA was employed to examine the effects of teachers' experience (1-5 years, 6-11 years, 12-17 years and 18 years and above), teachers' type and their interaction. Interaction effect of the type and experience

indicated the vital role of both factors in instructional processes and elements included in each component. This effect can be attributed to the nature of the profession itself which requires appropriate physical environment (e.g.: buildings, classrooms etc.) as well as sufficient years of experience. It is expected that any teachers' successes in each one of the above mentioned domains will not be attained without sufficient or reasonable years of experience and hands on practices. Regarding the effect of types of teachers, it seems that schools in UAE provide all teachers with a minimum quality of environment and facilities required to be actively involved in planning, managing, delivering and evaluating instruction. The follow up procedures implemented by principals, administrators and supervisor may also play a significant role in this regard. In addition, other factors may be considered such as appropriateness of the physical environment, access to all types of technology, and various types of incentives provided for teachers. Effect of experience at all levels (1-5 years, 6-11 years, 12-17 years and 18 years and above) was also significant in all aspects of instructional practices. This could be easily explained if we consider teaching as a field of profession. In any professional field, experience is to be considered a highly important factor, and teaching is no exceptional. With the recent move of the educational system in UAE towards the western educational systems and various training opportunities provided for all teachers, it is expected that teachers representing different sectors in the country attained and mastered the minimum skills required to be implemented to all instructional practices, included planning, managing, delivering, and evaluating. Results of the two-way ANOVA revealed a significant effect for type in planning, managing instruction, delivering instruction and evaluating instruction as

follows: Planning ($F_{1,255} = 41.98, p < .01$), experience ($F_{3,255} = 28.20, p < .01$), and interaction between type and experience ($F_{3,255} = 24.83, p < .01$), Managing instruction: types of teachers ($F_{1,255} = 154.03, p < .01$), experience ($F_{1,255} = 56.60, p < .01$), interaction ($F_{3,255} = 34.03, p < .01$). Delivering instruction: types of teachers ($F_{1,255} = 174.05, p < .01$), experience ($F_{1,255} = 74.2, p < .01$), interaction ($F_{3,255} = 42.05, p < .01$), Evaluation: types of teachers ($F_{1,255} = 63.16, p < .01$), experience ($F_{1,255} = 12.37, p < .01$), interaction ($F_{3,255} = 8.770, p < .01$). Scheffe's results revealed significant differences of $P < .001$ and $P < .0001$ except for the period of 18 years and above. This result for the last group could be attributed to the less motivation, desire of retirement and the lack of professional qualifications and pre-service education of those teachers. It could be due to the fact that teachers who are relatively new graduates are more motivated than those with more experience. It is also possible that burnout among teachers who are relatively new is less than with those who have more years of experience. Results also revealed differences in means of each level of variables. Means of special education teachers with an experience 1-5 years, 6-11 years, 12-17 years and 18 years and above were (3.434; 3.486; 2.086 and 2.140) consecutively, while means of regular education teachers with an experience 1-5 years, 6-11 years, 12-17 years and 18 years and above were (2.281; 2.344; 2.276 and 2.271) consecutively. The research provides specific implications. First, findings of the present study suggest that special and general education teachers do not seem to be using effective instructional practices needed for meeting the needs of students with special needs.

Special education in the UAE is still in its developmental stages. A lot of work must be done to ensure that students with disabilities receive appropriate education. Until now there are no laws and regulations that govern the special education field in the

UAE. In addition, the attitudes towards persons with disabilities in general are negative [1]. Second, even though teachers' perceptions of effective instructional practices is important, yet further research should concentrate on testing teachers understanding and abilities in teaching students with disabilities in actual settings. Further, in-service training should concentrate on effective instructional practices, especially in the areas of evaluating instruction. Third, teachers need to possess sufficient knowledge and skills in adapting strategies so they can systematically address the instructional needs of students struggling to learn. Finally, important implications exist for teacher education. Teacher preparation does not evidently include adequate or in-depth content instruction and may critically impact implementation of recommendations such as those presented by the Council for Exceptional Children. Given the accumulated knowledge with regard to the importance of teaching students with disabilities, teacher preparation programs should ensure that teachers possess the fundamental knowledge and skills necessary for effective teaching. Continued efforts to focus and evaluate teacher preparation programs in the areas of preparing teachers to use effective instructional practices are critical if we are to provide balanced instruction for students with disabilities.

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Parents as a family vocational adviser for children

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Abstract

PARENTS project is an educational project financed by the European Commission in the framework of the Lifelong Learning Program (Grundtvig scheme), which involves seven European institutions. The Supercomputing Center of Galicia (CESGA) carries out the technological part of the project. PARENTS' project main goal is to tackle the problem of training parents of adolescents to provide their children adequate orientation about studies and future employment options. This article describes the process of this project, its main achievements so far, and its technological aspects

1. Introduction

It is an undeniable fact that parents play a crucial role in planning their children's future professional career. Although researches into this issue have been conducted in the USA and Canada for 10 years, in Europe it is still a new subject matter. Parents' project started in 2007 and will finish by Dec. 2009, being an innovative attempt to cover this not so explored field in training. Technology enhanced learning is also explored in order to provide the most flexible and appropriate training to a diverse group of parents.

2. Project aims

Some of the project main goals are:

- To increase awareness of parents that they are an important cell in the chain of their children career making process.
- To broaden parents' knowledge in a handy way: how to help your own child in choosing their professional path
- Empower peer-parents consultation role in parents' education.
- To encourage constant cooperation in the field of professional orientation between personal counselors at schools and parents of pupils
- To reduce stress among young people that results from making a difficult decision concerning the choice of profession through

positive and specialist participation of parents in

this process

- To improve communication between children and their parents as a result of the joint participation in making crucial lifetime decisions
- To improve the effectiveness of the choice of profession made by young people as a result of acting in accordance with their own interests and abilities as well as correlating the future profession with the demands of the job market

3. Project partners

There are seven institutions that take part in this project from six European countries:

Table 1. Project partners



Academy of
Management -
Coordinator (Poland)



Association Baobab
(Spain)



University of Oradea
(Romania)



Institute for education
Ltd. (Slovakia)



Supercomputing
Center of Galicia
(Spain)



Die Berater (Austria)



Training 2000 (Italy)

4. Target groups

The target groups of this project are:

- Parents of young people who face the choice of making a decision concerning the direction of their occupational education.
- Young people facing the choice of occupational education.
- Personal counselors working in schools and school teachers who provide their pupils with personal counseling.
- Training companies: will receive a new training programmed for counselors and teachers which will enrich their training offer.
- Universities, which provide courses of career counseling.
- Academic researchers: increase of the number of research on parents' influence on career choices made by their children, examining whether education of parents in this area brings positive results.

5. Final users

One of the most important aims of this project is to conduct several pilot experiences where real training will be provided to parents and evaluate its effectiveness. First of all, it was considered necessary to know this group of parents' training needs regarding vocational and professional fields.

6. Parents' needs

In each country a focus group formed by ten fathers and mothers was formed. First of all, we needed to identify these parents' needs in the field of the vocational or professional adviser for his sons.

So, before starting the pilot experiences on training for parents, each partner carried out a survey with his focus group. This was later on summarized in a survey which pointed out their opinions on:

- Parents' will in helping children vocational choices.
- Parents' experience in cooperation with career counselors
- Parents' opinion on their children expectations while choosing a career
- Parents' expectations on counselor's assistance.
- Parents' opinion on responsibilities/ roles between child, parents, counselors, or other institutions.
- Parents' perception on skills needed to develop the career planning of their children
- Parents' opinion on the form and content of the planned project "products" (training, e-learning web site)
- Parents' commitment, in terms of learning time, in order to provide their children better assistance
- Parents' preferences regarding training support: face to face courses, virtual platform for peer groups, or e-learning material.

7. Training for parents

Once these parents' training needs were identified, the project developed face to face and online training contents in the field of vocational and professional field for the training sessions that would follow.

Training was envisaged to provide new handy skills for parents. Theoretical knowledge was limited to cover the basics. Practical skills are expected to be acquired during interactive face to face workshops (role playing, psychological exercises, dramas etc.).

Theoretical knowledge was provided to the participants as auxiliary materials available through the project's virtual environment. Training sessions consists of the following issues:

- How to get to know your own child: his/her talents; his/her interests; his/her hierarchy of values, his/her personality.
- How to help a child in making occupational decisions through education: setting aims in a proper way; constructing plans and their realization; coping with objectively and subjectively difficult situations.
- How to make use of the determinants of family environment and its occupational genetic diagram when planning the career of a child
- How to establish contact with the child and facilitate mutual communication in the key moments in the course of making occupational decisions by him/her.

- Where to search for the necessary information: institutions, web pages, literature connected with this issue.

8. Pilot courses

In each of the six participant countries a pilot course for 10 parents was organized. The content of the courses was first developed in English, and then, translated to all the languages of the consortium. Each pilot course consisted of 30 hours, following a blended-learning methodology. 10 hours were devoted to face to face training and 20 hours online training. To provide the online training part, the e-learning area of the Supercomputing Center of Galicia analyzed parents' choices and likes and designed and implemented a virtual environment for both trainers and parents.

9. Platform for trainers and parents

The virtual environment was initially based on an Open Source software named Joomla – Joomla is a Content Management System- which initially complied with the main needs identified, and it was adapted to comply with the training and information needs of the project. At the beginning, it was stated that the main environment should not be a standard learning management system, but a more flexible environment, that would mainly serve to host personalized information for parents, as well as communication tools and some sort of self-learning materials. The environment should also serve as a public website for other parents who might be interested in the project results and future participation, as well as a private environment that would require personalized access for those parents who participated in the pilots. Being a multilingual project, it should also take this into account and provide the seven languages used in the project (English was included as well).



Figure 1. Public section of the virtual environment

The private section counts on the following tools for trainers and parents:

a) Agenda Tool

In the agenda tool, trainers from different countries can add, modify or delete events about their local pilot courses.

Parents can check information in the agenda tool about the development of the pilot course.



Figure 2. Agenda tool

b) Forum tool

The forum tool is used for sharing ideas among parents and also, among parents and trainers. There is a main forum (in English) where parents and trainers from different countries can share ideas, and six forums (in Polish, Italian, Spanish, Romanian, German and Slovak) where parents and trainers from each country share ideas, exchange information etc.



Figure 3. Forum tool

Trainers from each country, can create, moderate, edit or delete questions and answers, but only in the general forum and in their own language forum. For

example, a trainer from Spain can only create, moderate, edit or delete questions and answers in the general forum or in the Spanish Forum. In the same way, participant parents can only access the general and their own language forum.

c) Self study exercises

The self study exercises are available for pupils (parents). This area has a theoretical section with activities and online forms.

Figure 4 Self study exercises

d) Case Study

The case studies are online exercises only available for participant parents. This section has a brief introduction for each case and then self evaluated activities with online forms.

Figure 5. Case Study

e) Recommended readings

In this category, there are two folders available for parents/trainers: one folder per country and a general one. The private folders are available for trainers, so, they can upload contents for the parents of their pilot course. And the common folder is

available for all trainers that are taking part in this project to allow them upload materials for all groups in English language. So, parents can access the folder of their language for downloading documentation in their language and the general folder for downloading further information in English.

Figure 6. Recommended Readings

f) FAQ

In the FAQ category, trainers have placed a collection of frequently answered questions for his pilot course users.

Figure 7. FAQs

g) Search

With the search tool, parents and trainers can search anything contained in the virtual environment. They can search by keyword, free words, exact phrase, etc.

Figure 8. Search

h) How to use the platform

In this section trainers and parents can find tutorials that briefly describe the functionalities of the virtual platform. So, basic information such as how to register, how the virtual platform works, etc. is shown here.

i) Profile

In this section parents and trainers can edit their own details, so they can change their password and also select their preferred language to use in the platform.

EDIT YOUR DETAILS

Username: gromaz

Your Name:

E-mail:

Password:

Verify Password:

Back-end Language:

Front-end Language:

User Editor:

Help Site:

Time Zone:

Figure 9. Profile

10. Summary

Vocational guidance and vocational counselling are able to make full use of the advantages of the Information and Communication Technologies. So professionals of this field together with parents and children can be clearly benefited from its use. The project initial report showed that both groups are ready to make use of ICT as a complement for face to face lessons, and are willing to take advantage of its flexibility and possibilities.

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Filial Responsibility and Guilt: Discourses of Eldercare of Parents by Middle-aged Children

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Abstract

The aim is to analyze how guilt is produced and counterbalanced in discourses of eldercare by middle-aged children. A feeling of guilt may develop when a person feels that he/she is unable to fulfill the obligations of those emotionally close.

This paper combines discourse analyses (DA) with discursive psychology (DP) in analyzing how seven middle-aged children produce and handle guilt in different care discourses in open and thematic interviews. The discourses of care alternatives were: 'the multi-generational family-care', 'natural care' and 'institutional care'.

Guilt was expressed with utterances such as "all the time", "always on my mind", "unquestionable". Guilt-speak were seen, among others, when unable to visit as frequently as desired or when pondering whether a parent would be in better condition at home. Guilt was counterbalanced, for example, with the help of doctors, others, spouse and the personnel in the nursing home. These were called upon for reassurance that the decisions in care were right.

1. Introduction

Social constructivism sees the world as being socially jointly constructed in language, but this does not deny the existence outside language [1]. The "embodied responsivity to others" together with jointly constructed meaning-systems, which are embedded in cultural and historical situations, form our actions and discourses. But although the world is constructed it is still possible to share common ways to see a situation and to orient to it. [2].¹ Discourse analysis and discursive psychology can be seen to be embedded in social constructivism.

The aim of this paper is to present different discourses of eldercare when taking 'filial responsibility' [3]. These discourses are then analyzed according to how middle-aged children

produce guilt-speak and how guilt is counterbalanced.

The present middle-aged generation has a very problematic situation when considering its filial responsibility. Often living far from the older generation and in a different socio-cultural world, the middle-aged children of elderly parents must choose a form of eldercare that falls between the ideal model of filial responsibility and the realities of the life of their own [4].

Filial responsibility, or the responsibility of adult children to care for their parents, can be considered as a gender-neutral responsibility and societal norm [5]. The cultural norm defines which actions are responsible in relation to weak parents [6]. The feasibility of fulfilling cultural expectations (and one's own wishes) to care for elderly parents is restricted by economic, geographical and time-related realities [7], [8], [9].

The elderly can be categorized in different age categories, such as third, fourth and even fifth age. The third age is represented by retired active and healthy people. In the fourth age, functional limitations increase [10], and in the fifth age, individuals become totally dependent on others [11]². When one's own parents move from the fourth to the fifth age, adult children must respond to their needs for help. The wish to fulfill the obligations of middle-aged children may have become a 'mission: impossible'.

According to Elwin-Nowak [13], feelings of responsibility build on an illusion of options to choose from and of possibilities to control one's own life. Guilt is a feeling that reflects one's inability to meet the responsibilities one feels towards others. A salient point of guilt is that one feels responsible for what happens and feels that one should have acted differently. [13], [14]. Guilt talk has earlier been studied also when considering women balancing

¹ Shotter & Lannamann critically view Gergen's constructions of social constructivism for example for the lack to share ways to see a present situation. [2]

² This categorization makes it possible to shift the debates of "active ageing" [cf. 12] which deal, according to my opinion, with the third and fourth age to the last phase of life in the fifth age with its special problems. Wreder [12] sees the viewpoints of talking, homeliness, and familiarity important but not unproblematic characteristics of 'good care'.

work and social roles [15]. The balancing of these roles resulted in feelings of guilt.

In this present study filial responsibility as seen in discourses of both men and women are studied and it is expected that the multiple tasks and expectations the middle-aged face form discourses.

In Finland in 1970 the legal obligation for children to care for their parents was removed [4]. Finnish policy on elderly care after the recession in the early 1990s is characterized by discussions of cost saving. In the name of cost saving, or besides it, elderly policy focuses on “natural care”, which means that the elderly and their next of kin participate in both care and cost. “Natural care” also means that the elderly can live, as long as possible in their own homes [16]. However, the dominating economic discourse in society can mean that living in one’s home is emphasized for economic reasons rather than humane reasons [17].

The aim of the research is to focus on how middle aged children talk about the care alternatives of elderly parents, in other words how filial responsibility is maintained. When not able to take care of old parents as one would want to, this may be expressed in guilt-speech. The discourses can be seen as ways of maintaining [18]³ filial responsibility and in this process counterbalancing guilt is important. Thus the research questions are:

1. *What kinds of care discourses are described by middle-aged children?*
2. *How does guilt emerge in the discourses and how is it counterbalanced?*

2. Data and methods

Seven middle-aged informants (two men and five women) were chosen to represent a phase in life when parents require care or when this phase has already passed. Some informants’ parents lived geographically close and some far away. Some had children and some none. The aim is not to explain the discourses with factors mentioned previously, but to get as different informants as possible to discuss their filial responsibility [cf. 17].

Both open and thematic interviews were used. When contacting informants the following was said: “The aim of the interview is to figure out the care process, negotiations around organizing care processes, and different processes of care decisions.” The interviews varied in length from about half an hour to one and a half hours. The interviews were tape-recorded and transcribed verbatim.

The concept ‘discourse’ [cf. 17] is used here to describe the mode of discussing the care alternatives for one’s own parents. The cultural and historical situation in Finland is characterized by the fact that

³ Her research focused on how parents with problem-teens maintained in speech themselves as good parents.

many women are active in working life and that taking care of parents is not a legal obligation. Filial responsibility is, however, a strong cultural norm which is strengthened by elderly policy and talk of ‘natural care’ [16]. Such norms are argued for or against in discourses. The transcripts were read several times to find those parts that addressed different kinds of discourses of care alternatives. The focus was to identify what seems to be natural and how it is justified in discourses when taking filial responsibility. [cf. 19].

Discursive psychology [20], [21] was used to explore how the psychological theme ‘guilt’ is handled in discourses [cf. 15] even without necessarily explicitly calling it ‘guilt’. The focal point was to analyze how guilt is constructed and managed in speech. Managing or counterbalancing guilt was defined as ways to reassure or explain oneself and to seek support.

3. Results

Discourses of care alternatives are presented. These describe at the same time how filial responsibility emerges in discourses. The focus is also to describe how guilt is produced and counterbalanced in these discourses. During interpretation, guilt in the discourses is defined by those parts of the speech where the social obligations and expectations felt are expressed, but cannot be responded to [13], [14].

3.1. Multi-generational family-care discourse

‘Multi-generational family’ means a shared household of two or more nuclear families. Multi-generational families were previously common in the Nordic countries when these countries were agrarian societies [22]. In this discourse the ideal or cultural norm – referred as a happy solution – is to be able to care for the parents in the homes of their children. The expression *happy* can also be related to guilt because it states how one should act. This model of care is presented as impossible by noting a lack of room and implicitly due to work, all of which is attributed to the modern world and lifestyle.

[...] and we actually discussed [...] why don't one of us take [her]? It would be happy if one of us would take mother to live with us, but in the present world and life, so there is no room and no one is at home [...]. (Adult 4)

When also women take part in the labor market they are not all-day homemakers and not available to elderly care at home. This is expressed very implicitly by *no one is at home*. When this unpaid labor force is unavailable the ‘multi-generational family-care’ model becomes unthinkable.

I: Now, how do you see the responsibility of adult children for their parents?

Quite a terrible question. This is an awful question. It is quite clear that we no longer live in such a society where parents live nearby or in the same [house] [...] I get it up my nose when one reads the papers and then make someone feel guilty: Why don't you take care of your parents? [...] It is not a question of coldness or something like I would not love them, but we live in this society, and one must work so that one can care for one's children and keep oneself alive [...]. (Adult 1)

The interviewer's question can be interpreted to evoke descriptions of deep guilt, evident in expressions like: *a terrible question, an awful question*. Filial responsibility, in the discourse, craves that the parent should be living together with the child. This model of care appears as an ideal, but remains heavily criticized. The ideal model of care is challenged by taking care of one's children, having to work, and living in a society different from that of earlier times. Societal demands for taking care of parents are presented in newspapers and produces guilty-speech when one cannot fulfill these demands. It is emphasized that the inability to take care of parents stems not from a lack of love for one's parents, but from the realities of modern life.

The multi-generational model in care is a repeated discourse which emerges as an ideal solution.

[...] in one phase, when I said to my husband that we should take care of [them]. He said, "Okay, let's build an extension to the house and then we'll take your parents and my parents and see who goes crazy first." So it is. At times I think it would be better if [they would live with us, as in] African books where they have the old ones living with them. [...] it depends on what your parents are like. [...]but then one sees that she is annoyed that she is not at her home, and I get annoyed with her. The relationship would probably tighten up completely if we lived under the same roof [...]. (Adult 5)

One can idealize the 'multi-generational family-care' model, but one's own temper as well as that of one's parents, are implicitly presented as prerequisites for the success of such a model. Guilt is counterbalanced with *completely* tightening relationships and mental stress as valid reasons for not choosing that kind of model of care. The husband is called in to convince that this model of care is unthinkable.

3.2. 'Natural care' discourse

Having parents live in their own home – as 'natural care' also means – is expressed as an ideal, in other words a cultural norm, when stating *it would have been fine*. The reason given is that the parent had enjoyed living independently.

[...] but mother could no longer manage at home alone. It would have been fine if she could have been at home, and she had enjoyed it. [...] When mother was at home she at once ended up in hospital with an ambulance. [...] It is always on my mind whether we should have tried a longer [period]. And if mother had been at home, would her health be in a better state or something? It is this terrible feeling of guilt all the time. Was it the right solution? Although mother took part in the decision, there was no alternative when she could not manage. [...] mother could not have stayed at home, according to our opinion, and to the doctors' and others'. (Adult 1)

The wish of the parent to be in her own home is described as impossible because of the need to get *at once* to the hospital. Guilt is expressed when pondering whether mother should be in better health at home. The uncertainty of whether the right decision was reached is described as *all the time* being on the mind. The guilt is counterbalanced when telling that mother took part of the decision although she had no other alternative. The rightness of the decision is reinforced by using the collective expression *our*. Medical expertise serves to convince the rightness of the decision and to counterbalance guilt.

Taking care of one's parents in their own home represents a proper way to show filial responsibility. This form of filial responsibility is said to require a leave of absence from work. To be able to care for one's elderly parents in a responsible way, a collective discussion is called for on this matter.

[...] because then [...] you cannot manage to have many challenging tasks at work and there also [in your parents home] are demanding tasks. [...] such a leave of absence for a year [...] is possible if the situation requires it. [...] Actually in this society it should be easier to take care of your own parents in a similar way as [...] you can leave to take care of children [...] equally, on a collective level, this should be possible in practice. (Adult 2)

To manage demanding tasks at work makes it difficult to live up to care norms as one would want. When concurrent tasks in elderly care are demanding, combining work and care in a satisfactory way is considered impossible.

3.3. Institutional care discourse

When the elderly parents moves from the fourth age to the fifth age and become increasingly dependent on others, the transition to institutional care is described as feeling *terribly bad*, but still unavoidable.

[...] when the final sickness comes and one must leave for the nursing home or hospice, it will feel terribly bad for them as well when they have been used to being at home as long as possible. And when one leaves, then it is final. (Adult 2)

In a shifting discourse, the parent is said, as such, to like being in the nursing home, although other versions of the parent's opinions have been expressed elsewhere. Filial responsibility is seen to demand continuous visits. When this is impossible, the discussion leans on nurses, who ease the obligation to constantly visit the nursing home and, simultaneously, alleviate the feeling of guilt.

[...] My [relative] and I, we try to visit so that we visit at different times so that there are visitors continuously, although we know that it is a good place. The nurses have said that one need not visit all the time: it is her home and she likes it there. Mother calls it her home, this nursing home, so that she, as such, likes it there. [...] But I definitely feel that society also has responsibility for it [elderly care]. (Adult 1)

The discourse underlines *knowing* that the nursing home is good. Mother is said to like being there because the nursing home is called *home*. The discourse appeals to society as having responsibility for taking care of parents, a responsibility described as *definitive*. The guilt is counterbalanced by sharing the responsibility with society, leaning on nurses' opinions, feeling that the parent likes living in the new home, and visiting as often as possible.

Both society and relatives are seen to have the responsibility to care for elderly parents.

I would say, in contemporary society, one can't be required to take one hundred percent responsibility. One must consider that you are working and then have families and the next generation. It should be so that society has to take some shared responsibility; one can't altogether burden the children with it. We are no longer in an agrarian society, but of course neither can it be altogether the responsibility of society. [...] I would like to say that we have some quite scary societal messages after the last election [...] that it is not the affair of society to care for the aged, but the affair of relatives. These are awfully alarming in my opinion. [...] that we don't in the

present hectic situation in life kill people then, that when one acts right in this cross-swell between love and obligation when one is under terrible stress. (Adult 6)

Present society is described as different from the agrarian society Finland once was, a time described as to being over. The responsibility of society is argued with compulsion (*society has to*), but not only as the task of society. The responsibility of children is diminished with expressions such as *altogether*. Both society and relatives are seen to have the responsibility to care for elderly parents. Guilt is counterbalanced by relating to the hectic life and talking about killing people to underscore just how stressful life is.

When parents' functional limitations become substantial institutional care is needed. The discourse talks of thorough comparisons between different care alternatives as a way of fulfilling filial responsibility when one cannot provide the care needed. Some alternative is spoken as unsuitable and the middle-aged child describes an active actors-role when choosing a better alternative.

It really was not her place. [...] I was quite active and as a result my mother got such a nice [...] they had their own rooms and a shared bathroom, toilet and kitchen. [...] they were there as a kind of paying guest. They all furnished [their rooms] in their own ways with their own things to be their own home, this room of theirs. [...] It really was a nice place, but we knew there'll come a time when she can't stay there anymore. [...] She had fallen and broken her hip [...] and there were no resources for care and nursing like those in a nursing home. [...] she was moved to [...] a private hospice where they had [...] more nurses and more [...] nursing and [...] a doctor and nurses and health services. (Adult 7)

Guilt can be seen in the discourse in many expressions. The service home, where one was like a paying guest, was considered suitable. 'Paying guest' is something positive instead of thinking of somebody living in an institution. The place was emphasized as being like *a home* where one could furnish it as one desired. The niceness was underscored several times. Guilt was counterbalanced by choosing a right place, and when being able to see that the place is nice and homelike. When hospice was the only option, filial responsibility was evident when emphasizing that the place was private. 'Private' can be seen to mean that one wants the best, and this best differs from municipal care. The amount of nurses and a doctor is spoken to stand for better medical care and nursing.

Obtaining a place in a nursing home is described as a very difficult process, something adult children

handle as an example of filial responsibility. To succeed it is said to require that the relatives must be well-connected and have other resources.

[...] It is all private nursing homes, and at that time it was really difficult to get, as it is nowadays. So if you have an old mother, you'll realize that when you need help, it is really [...] difficult anyway. Or you have to have connections or something. [...]

I: Guilt is often interlinked among individuals whose parents have died.

That is exactly one reason why I visit my mother, so that afterwards, I won't think that I could have just looked after her, so I won't have such a bad feeling that I abandoned her. (Adult 3)

Guilt is proactively counterbalanced by frequently visiting the parent. One's own bad feelings are alleviated by looking after the parent while the parent is still alive. Guilt is spoken both present in actual life and foreseeable as becoming real after the death of the parent.

4. Conclusion

Filial responsibility [3] is described by middle-aged children in different discourses when talking of eldercare. In these discourses the aspirations to take care of their elderly are described. Some discourses stand for unrealized ideals, which can be interpreted as dealing with cultural norms and eldercare-policy discourses. These discourses need to be argued against. Other discourses describe unavoidable solutions and these necessitate arguments to argue for the model. Discourses that described care alternatives were 'multi-generational family-care' [cf. 23], 'natural care' and 'institutional care'.

When discussing institutional care, the adult children are described as essential in choosing and obtaining a suitable place, or good care, for the parent. In other words middle-aged children are needed in the discourses to speak for their elderly [cf. 12]. This active role represents filial responsibility when other expectations, such as caring for the parent in his or her home, or his or her children's home, cannot be fulfilled. This ability to be active in this matter places old parents in very different situations regarding how their interests are looked after and this is stated in discourses.

A central cultural expectation [5] is that adult children care for their elderly parents. This responsibility for caring for parents is expressed in discourses with such adverbs as *all the time*, *continuously*, *unquestionable*. These emotionally felt responsibilities or culturally stated expectations of filial responsibility are not always fulfilled because

of hindrances and competing strains [cf. 4], [cf. 7], [cf. 8]. This inability to fulfill expectations and cultural norms towards one's loved ones may cause guilt [13], [14].

In the discourses, the contradictory expectations of elderly care and the subsequent guilt are expressed in many ways. Guilt results when one cannot fulfill the parent's wish to stay at home, when one feels dubious of whether the parent should have been in better health at home, when one is unable to visit as often as one should. Guilt is counterbalanced in the discourses with doctors, friends, spouse and the personnel in the nursing home who are called upon for reassurance that the care solutions are right.

When the parent was described as relieved or when there were no alternatives, when the institution was home-like, the care model was seen as proper. The importance of homeliness in good care is critically discussed elsewhere [cf. 12] and 'homeliness' have different meanings. Here it meant to be like a tenant, to be able to furnish as one likes and to be called home by the elderly.

The cause for the choice of care was spoken to stressful work, changes in society and women not at home. These are societal restrictions but they are emotionally spoken as guilt on the individual level. The counterbalancing guilt made the speakers able to present themselves as properly bearing filial responsibility in an impossible situation. In a previous work [15] processes of guilt reduction can be read as "collective moaning", "co-complaints", according to my interpretation. Counterbalancing guilt – whatever the technique is called – can be seen as an essential discursive task for the mastery of life [cf. 18]. The counterbalancing guilt can be seen as a way to describe oneself as responsible and as to take good care of elderly parents.

Discourses make visible how care solutions are discussed and what kinds of feelings eldercare evoke. This may have an emancipating and educational effect on readers in a similar life-situation. Also family education could use the results when looking at family relations as a life-long process.

In a wider context this paper deals with the question of good care of one's elderly parents and filial responsibility in attending to their best interests. Wreder [12] discusses the problematic nature of good care in institutions. Open questions for further research deal among others with questions of good care for elderly in the fourth age and in the fifth age.

Discursive psychology usually uses conversation analysis (CA) and transcriptions accordingly [20], [21]. Natural conversations in the matter of the paper were difficult to obtain. That is why the material was based not on natural conversations [cf. 15] but on open and thematic interviews. Consequently, the use of discourse analysis (DA) when seeking culturally imbedded norms for filial responsibility in eldercare

can be seen as warranted. This paper, also, is a discourse that aims to form the reality when considering eldercare and the situation of the middle-aged [cf. 2].

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Stepping into the Light: One State's Journey towards Transparency and Accountability in Teacher Education Review Process

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Abstract

Challenged with creating a transparent and accountable educator licensure program review process, a group of nine faculty from eight colleges or universities in Ohio along with three staff members from the Ohio Department of Education worked for over a year to develop such a process. The initiative created a sound and simple review to verify that educator licensure programs meet professional standards by providing a data-driven process that is meaningful, equitable and reasonable. The review aims to improve licensure programs and to provide evidence that teacher education prepares competent, qualified, and caring teachers. The following paper provides an overview of the development process, submission components, peer review process, and a proposed pilot study.

1. Introduction

Policy makers today are critical of teacher education and demand evidence that it makes a difference [1]. Thus, faculty in schools, colleges, and departments of education (SCDE) must show that the value added by their teacher preparation programs is significant and teacher education creates better teachers. To this end, they are being challenged to develop a culture of data-driven decision making for program improvement and accountability [2].

The two national accrediting organizations in the United States, the National Council for Accreditation of Teacher Educators (NCATE) and the Teacher Education Accreditation Council (TEAC) are encouraging the development of this culture of evidence by incorporating the dimension of data-driven decision making in their quality principles and standards [3].

Last year, the Office of Educator Preparation (OEP) of the Ohio Department of Education (ODE)

invited representatives from TEAC-affiliated colleges and universities to a meeting with Dr. John Soloninka, OEP Associate Director. At the meeting Dr. Soloninka stated that, in accordance with the Ohio Administrative Code 3301-24-03, colleges and universities that prepare educators are required to meet or exceed the standards as defined by either NCATE or TEAC [4]. Further, the accreditation process must include an external data-driven program review process to ensure that all educator licensure programs have met the Specialized Professional Associations' (SPAs) program standards, if applicable, or the Ohio licensure program standards, if no professional standards are available.

Dr. Soloninka noted that NCATE has a SPA program review process as part of its national accreditation process, but TEAC does not have a parallel process in place [5]. A TEAC Program Review Advisory Group with the task of developing a peer review process that institutions seeking TEAC accreditation would follow for the submission, review, and approval of all educator licensure programs, was formed consisting of the following SCDEs: Case Western Reserve University, Cincinnati Christian University, College of Mount St. Joseph, Lourdes College, Oberlin College, University of Findlay, Xavier University, and Wilmington College. Three consultants from ODE were named to provide assistance to the Advisory Group, and the first author was selected as the Advisory Group's chair.

The TEAC Program Review Advisory Group met regularly and worked diligently on the initiative for more than 12 months. During that time the major elements, such as the submission components, review process, and pilot program were developed. The purpose of the following paper is to summarize and present the accomplishments of the Advisory Group. The group believes that this work advances the culture of data-driven decision making in SCDEs by creating a process that is meaningful, equitable, and reasonable.

2. Process overview

The TEAC Program Review Advisory Group adopted the following purpose statement: “The purpose of the Ohio external program review process for educator licensure programs is to verify that programs meet professional standards by providing a data-driven process that is meaningful, equitable and reasonable.” Six guiding principles were drafted to guide the process, and one of the most significant guiding principles was the acronym K.I.S.S. M.E., which stands for KeeP It Simple, Sound, Meaningful, and Equitable. The group met monthly for twelve months and group decisions were made through consensus.

3. Program review components

The program review process consists of the five components or sections that would be completed by each teacher education program offered at a college or university. The five components are as follows:

- Section 1 – *Contextual Information* – In this section, the program would provide basic information to assist the reviewers in understanding the program. Such information requested includes: mission statement; unique or defining features; criteria for admission retention and exit from the program; the number of candidates admitted and completed; and a program of study that lists the courses and field experiences.
- Section 2 – *Standard Alignment* – Programs are asked to complete a matrix indicating how their program learning outcomes align with the Ohio Teacher Standards and the SPA standards.
- Section 3 – *Types of Evidence* – In this section, programs are asked to complete a matrix that lists the five required assessments of student learning that are being submitted as evidence of meeting the SPA standards. All programs must provide a minimum of five assessments and no more than a maximum of seven assessments. The five key assessment areas are: subject matter knowledge; pedagogical knowledge; assessment of student teaching or internship, which includes the impact on student learning; and two additional assessments that address SPA standards. For each of these areas, the program identifies the specific assessment instrument or cluster of instruments used to generate the performance data, the type of evidence (standardized tests, performance rating, etc.), and the assessment protocol which indicates when and how the assessment instrument is used (admission to program, required course, admission to student teaching, etc.). In section three, programs are to list the specific SPA standard and indicate which of the individual assessment

instruments listed in the matrix addresses each of the standards. Multiple assessment instruments should converge, triangulate, and indicate meeting the standard.

- Section 4 – *Assessment Data Reporting and Analysis* – This is the heart of the review process and in this section, programs present the assessment data generated by the instruments identified in Section 3 as evidence of meeting the SPA standards. All programs are asked to provide three years of assessment data for each assessment instrument. Programs are required to use the state licensure test as evidence for the subject matter knowledge and pedagogical knowledge assessments. For each standard, programs are to identify the assessment instruments (Section 3) and the specific assessment items from the instrument (e.g., a particular section or questions from a standardized test or a field experience evaluation form). The data are to be presented with simple tables. After the assessment data are completed, a succinct analysis of the data findings describing how well the program is meeting the SPA standards is required.

- Section 5 – *Conclusions* – Programs are to provide a brief narrative explaining what steps were taken, or will be taken, for the improvement of the program in response to the analysis of the assessment data generated by the program review. In the narrative, programs are to address the following two questions: What curricular and/or pedagogical changes have you made or are contemplating making in your program as a result of your review? What, if any, changes have been made or are being considered in your assessment program or procedures as a result of your review?

Three Appendices are also required to complete the document. The three appendices are:

- Appendix A – A table indicating three years of enrollment data, as defined in Section 1.
- Appendix B – A list of course titles and required hours of field experiences.
- Appendix C – Samples of the Assessment Instruments and rubrics listed in Section 3.

4. Peer review process overview

The most challenging aspect of the project was creating a peer review process that met the pre-established guiding principles, such as providing a meaningful, equitable, and reasonable peer review aimed at program improvement and improved student learning. The Advisory Group created an external peer review process that recognized the developmental nature of programs and assessment systems and allowed for innovation and creativity in addressing the standards and guidelines. Although the review of programs is primarily evaluative rather than

consultative in nature, the group allowed peer reviewers the opportunity to suggest actions the SCDE faculty may consider in order to improve the relevant program in relation to the SPA standards.

An assessment rubric was developed to evaluate each component and the various elements of the components. For example, Section 1 Contextual Information has five elements that comprise the section. For each element a descriptive assessment was developed – a column indicating further development required (the program did not meet the criteria) or continuing approval (the program satisfactorily met the criteria). In addition, each section was weighted in order to recognize the importance or significance of the component that section represented. Table 1 indicates the components and the points assessed for each component. Reviewers were to award the points for each component as defined. The final program status outcome of the review is either “continuing approval” or “further development required”. The total score from all five components of 80 points or higher would result in the program being approved for continuation. If fewer points or significant deficiencies occur, then the overall designation of “further development required” would result. In such a case, the program would have the opportunity to provide additional information or clarify apparent deficiencies in the program.

Table 1. Component point values

Component	Point value
Sect. 1 Contextual Information	15
Sect. 2 Standard Alignment	15
Sect. 3 Types of Evidence	25
Sect. 4 Assessment Data and Analysis	25
Sect. 5 Conclusion	20

Essential to the external peer review process is the need to have highly qualified and well trained reviewers. The following qualifications for reviewers were defined:

- Experience with national or Ohio SPA reviews, or faculty member in SPA area with SPA membership, or administrator of a program in the SPA area (e.g., department chair) plus annual review of SPA standards and program review protocol.
- Commitment of three to five days per year for training and reviews.
- Ability to evaluate in a fair and unbiased

manner.

- Reviewers may review in as many areas as qualified.
- Potential conflict of interest in a review assignment will disqualify a reviewer from that particular assignment.

Initial reviewer training would be conducted by the TEAC Program Review Advisory Group and the Ohio Department of Education. The initial one-day training would consist of review of the Program Review Guiding Principles, the process and all related materials including the Program Review Rubric and all standards. After a reviewer had been through the initial training, a half-day “refresher” training would occur in subsequent years.

Program reviews would occur twice a year. Reviewers would gather for one to two days depending on the number of reviews to be conducted. Each program submission (five components) would be reviewed by two reviewers working together, with a third “tie-breaker” if necessary. To ensure equity, one reviewer would be assigned as a “case manager” for each participating SCDE. In addition, one reviewer would be designated as “program manager” to ensure consistency across all programs being reviewed. All reviews would be completed during the one- to two-day review session.

5. Proposed pilot study

With the Program Review Components and review process developed, the Advisory Group proposed that a pilot study be conducted to further refine and develop the review process. The group recognized that the process was indeed a “work in progress” and could be improved. The proposed pilot study was to include four SCDEs who were scheduled for TEAC accreditation over the next two years. These four SCDEs provided a range in the number of programs and in the diversity of programs. A budget was established to cover the cost of the study. Unfortunately, the current global recession caused significant state cutbacks and funding was not possible. Thus, the pilot study was put on hold and it is the hope of the TEAC Program Review Advisory Group that funding will be secured to conduct the study in the near future.

6. Lessons learned and conclusion

Because of the lack of funding at the state level, the last formal meeting of the TEAC Program Review Advisory Group was held in March 2009. An interesting development has occurred in the past six

months which may resurrect the pilot study. The Governor of the State of Ohio presented his education reform initiative and, in that initiative, transferred the oversight of teacher education programs to the Chancellor of Education and the Ohio Board of Regents (OBR). The Advisory Group was asked to present their work to OBR and it was greeted positively. Additionally, the TEAC Program Review Advisory Group presented their work to the spring conference of the Ohio Consortium of Teacher Education Organizations (OCTEO) and won their endorsement.

Many lessons were learned through this initiative. One of the most important was the significant effort and commitment it took to create a process that is simple, sound, meaningful and equitable. The most rewarding of these lessons is that of working with colleagues committed to the goal of improving teacher education in Ohio through a transparent and accountable review process. This initiative was truly a team effort. While the discussions at times were intense, the group reached consensus on every decision made. Thus, the authors would be remiss if they did not acknowledge the following members of the TEAC Program Review Advisory Group: Ed Bernetich and Kathryn Schafer (Case Western Reserve University), Rebecca Waters (Cincinnati Christian University), Deborah Roose (Oberlin College), Julie McIntosh (University of Findlay), Bob Townsend (Xavier University), Vicki Wilson (Wilmington College), Beverly Farmer, Lori Parker, and Rhonda Zatezalo (Ohio Department of Education).

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Adaptation of the Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R) to the South African context.

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Abstract

Literacy levels are increasingly important in health care because professional nurses and other health care professionals often use written health education materials as a major component for patient care education. The aim of this paper was to adapt and validate the REALM-R to the South African context. A modified Delphi-technique was used to measure the judgement of a group of experts for the purpose of making a decision. Eight experts in the field of Nursing Science were selected purposively to obtain the most reliable consensus. Data was collected by means of a self-report whereby participants responded to a series of questions posed by the researcher. Descriptive and content statistics were used for analysing data. The REALM-R was adapted to the South African context to ensure that the literacy level of South African clients is measured with the appropriate instrument.

1. Introduction

The Rapid Estimate of Adult Literacy in Medicine Revised (REALM-R) is designed to identify how well primary care clients understand the words that are commonly used by physicians or other medical staff [1]. According to [1], the REALM-R is a shortened version of the REALM and consists of 8-11 commonly used medical terms for measuring literacy. Patients are asked to read down the list of medical terms and pronounce as many words correctly as possible. Any word that is mispronounced or not attempted is considered as an error. Each word pronounced correctly is marked as such. If the participant has a score of less than 6 out of 8, the participant can be considered at risk for low literacy [4]. The test can be administered in less than 2 minutes, it is ideal for being adapted and validated for the South African context. The REALM-R is validated in English and makes use of only readability testing to determine the patient's health literacy levels.

The National Adult literacy Survey [6] indicates that 48% of American adults do not have literacy skills that

are necessary to function adequately in the society. In South Africa, the Skillshare International [8] reports that one in six people (40%) are functional illiterate. Literacy levels become increasingly important in the health care context because professional nurses and other health care professionals often use written health education materials as a major component for patient education. Health education materials often require reading levels higher than the reading level of most people [5] and therefore patients with low literacy will have difficulty understanding health care instructions and making appropriate health care decisions [2,7]. In South Africa, no current instrument is available to assess literacy levels of patients in the primary health care setting, as compared to several instruments developed and validated internationally.

2. Purpose of the study

The purpose of the study was to adapt and validate a suitable literacy instrument to measure the English literacy levels in primary health care patients. The aim was to adapt the REALM-R to the South African context.

3. Research methods and design

A modified Delphi- technique design was used to measure the judgement of a group of experts for the purpose of making a decision [3]. It provides a measure of obtaining consensus among experts who have different views and perspectives. A panel of experts were used in adapting the REALM-R for the South African context by choosing appropriate South African words to replace the American words. Eight Nursing Science experts were selected purposively to participate in adapting the REALM-R for the South African context. The validation panel, consisting of 30 members that validated the adapted REALM-R, included all the members of the adaptation panel as well as a much wider selection of registered professional nurses' expertise in community health, primary health care and health promotion.

4. Data gathering and analysis

The panel of experts were asked to complete a form with words that are frequently used in the primary health care setting. Each member received a copy of the original REALM-R (US) to allow them to view the format of the REALM-R. The REALM-R was selected on the basis of the number of times it was chosen by the members of the panel of experts. In each round of the data gathering, a score was given to the number of times a word appears.

5. Results

In the second round of the Delphi technique, a combined list and frequency distribution of the participants' lists were created as indicated in Table 1.

In round 4, three possible South African REALM-R literacy instruments were constructed based on possible combinations of the words reflected in Table 2. The exact format of the original REALM-R was used for the adapted REALM-R for the South African context. Only the words of the original REALM-R were adapted for the South African context. The number of words and number of syllables of the words remained unchanged. The number of words and syllables were as follows: three words with one syllable, two words with two syllables, three words with three syllables, one word with four syllables, one word with five syllables and one word with six syllables.

The three REALM-Rs were validated and the final combination of the REALM-R was chosen in round 4 and then used for assessing the literacy levels of primary health care clients in the West of Tshwane using the REALM-R. Figure 1 illustrates the REALM-R adapted for the South African context.

6. Conclusion

Teaching in such a way that patients with low literacy cannot understand negates the purpose of teaching. Adapting the REALM-R to the South African context was therefore necessary to ensure that the literacy level of South African clients is measured with the appropriate instrument.

Table 1*: Words chosen by panel of experts according to the number of syllables and frequency in brackets

Syllable(s)	Word (frequency)
One	Pain (5) Germ (5) Sick (4) Pill (3) Sign (2) Food (1) Dose (1)
Two	Condom (9) Fever (4) Treatment (3) Weakness (2) Disease (1) Cancer (1) Asthma (1) Attack (1) Advise (1) Bleeding (1) Virus (1) Diet (1)
Three	Infection (6) Prevention (4) Vomiting (3) Transmission (3) Exercise (2) Prescription (2) Nutrition (1) Menopause (1) Nausea (1) Abnormal (1) Pregnancy (1)
Four	Contraception (5) Constipation (4) Hypertension (4) Obesity (3) Medication (3) Sexually (2) Education (2) Diarrhoea (1) Antenatal (1)
Five	Immunization (8) Tuberculosis (7) Antibiotics (6) Examination (3)
Six	Immunocompromised (8) Gastroenteritis (8) Osteoporosis (8)

Table 2: Three words per syllable group with the highest frequency chosen for the adaptation of the Realm-R**

Syllable(s)	Word (frequency)
One	Germ (5) Pain (5) Food (3)
Two	Condom (9) Fever (4) Treatment (3)
Three	Infection (6) Prevention (4) Transmission (3)
Four	Contraception (5) Constipation (4) Hypertension (4)
Five	Immunization (8) Tuberculosis (7) Antibiotics (6)
Six	Immunocompromised (8) Gastroenteritis (8) Osteoporosis (8)

REALM-R FOR THE SOUTH AFRICAN CONTEXT

Patient name: _____ Date of birth: _____
Number: _____ Date: _____
Clinic: _____ Examiner: _____
Highest school grade completed: _____

Pain _____
Sick _____
Food _____
Condom _____
Fever _____
Infection _____
Transmission _____
Prevention _____
Contraception _____
Immunization _____
Immunocompromised _____

Score: _____/8

Figure 1: REALM-R for the South African context

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Session 3B: Teacher and Adult Education

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Entrepreneurship Education in Indonesia's Higher Education Institutions A solution for Problems Faced by The Next Generation

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Abstract

Entrepreneurship education is seen as a solution for problems faced by higher education institutions graduates in Indonesia. Many efforts has been done by the government, academic institution and business organization to support the development of entrepreneurship education. The success of this effort wil not only depends on the amount of fund allocated for entrepreneurship program, but also in applying the most suitable teaching methods.

1. Introduction

Many universities in Indonesia have started preparing their students for entrepreneurship. With more than 200 million population and over 1 million unemployed higher education graduates, entrepreneurship is seen as a solution for countries' unemployment problem. From the total population, Indonesia now have only 0.18% of entrepreneurs. A very low percentage compared to other countries in Asia.

Many efforts has been made from the government to breed new young entrepreneurs. In education field, the ministry of National Education has developed policy for entrepreneurship education in higher education. For students, the programs are giving grants for the implementation of students business plans, and for the lecturers the programs are training for trainers in entrepreneurship.

Efforts to breed new young entrepreneur are not only comes from the government and academic institutions, but also from business enterprises that have started allocated funds from Corporate Social Responsibility (CSR) program in entrepreneurship education. With all these supports, the next problem would be finding the best way in teaching entrepreneurship. Deciding what model and patterns that should be designed to teach entrepreneurship has therefore becoming very important.

In the university, entrepreneurship is commonly taught as one of the subjects. In certain department, even is still as elective subjects. In the business school, entrepreneurship has grown to become one of the major. But at the university level, only few universities has adopted entrepreneurship courses involving students from multi disciplinary, whereas

entrepreneurship so far is best taught by using multidisciplinary approach.

This paper presents the development of entrepreneurship education in higher education institutions in Indonesia and discussing methods and patterns suitable to teach entrepreneurship in higher education institution.

2. Discussion

The question about can entrepreneurship be learned, is a classical questions that has been answered by Drucker (1986). According to Drucker, entrepreneurship is a discipline, and like any discipline, it can be learned. But the next question is about pattern that should be designed and what topics that should be taught in entrepreneurship courses. According to Hadjimanolis (2007) entrepreneurship is usually associated with business start-ups, a broader view considers it as the expression of an active spirit, initiative, and creativity, not necessarily equated to business creation, but as an approach to life. Therefore effective entrepreneurship education is not about teaching how to start a new business, but effective entrepreneurship education delivers the development of skills and competencies associated with successful entrepreneurship. (Binks, Starkey & Mahon, 2006).

3. Conclusion

This paper will provide information on the development of entrepreneurship education in Indonesia, how entrepreneurship is seen as a solution for today's condition, and also recommends methods and patterns to teach entrepreneurship in higher education institution.

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A Study about Prospective Teacher's Thinking about Knowledge, Learning and Learners in India

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Abstract

The nature of the beliefs that students bring to teacher education need to be explored to understand the direction that they may take once the student teachers are placed as regular teachers. Teachers need to reflect on and evaluate their own thinking and beliefs and at times the metaphors they use in their classrooms. Keeping in view the 'text book culture' prevalent in India this paper explores and analyses the thinking of teachers about 'knowledge', 'learning' and 'learners' and its implications for teacher preparation programmes in the Indian scenario.

1. The Background

Teacher knowledge is a key to effective teaching. Understanding teacher knowledge, teacher thinking and teacher beliefs can help us understand teacher behaviour in classroom. Research shows that teacher thinking influences teachers' perceptions and judgments, which, in turn, form teacher beliefs that affect their classroom practice. The development and influence of beliefs in teacher education has been a topic of interest for researchers in recent years. Most of these studies, however, have been conducted in US or UK. In India and in countries with low literacy rates however, not much work has been done in this area.

2. The Study

Assuming that teacher thinking or beliefs are subject to varying degrees of change throughout the life of a teacher and also during the teacher education programme. My interest in the area was guided by the literature on teacher beliefs and on the observation over the years in teacher preparation, that many students had perceptions or strongly held beliefs about various aspects of education, even on knowledge, learners and the learning process. These beliefs many a times emerged when the student teachers taught or discussed or took any decision regarding the process of learning during their SEP. If

we believe these beliefs to be as strongly held and resistant to change then these must surely be our focus of reflection, discussion and action. Major questions, that guided my research are that if student teachers enter the teacher education programme with pre-existing beliefs, as the review of literature in most western studies reveal, would it not be interesting to explore the beliefs of Indian prospective teachers' about Knowledge, Learning and Learners, which are the most important and key elements in a teacher's life. Whether these beliefs, once identified, change or remain the same after the prospective teachers take up teaching as a profession, needs to be explored. Also, what implications does this thinking have for teacher preparation programmes needs to be studied for the improvement of the future of teacher education programmes in India?

3. Method

In the present study, multiple methodologies are being utilized under the qualitative research paradigm that helps by searching for contained meanings, beliefs and thoughts of prospective teachers.

4. Tools

Reflective Fastwrites (OMBT): The student teachers are asked to write on 'My Being a Teacher' and what it means to them right at the beginning of the teacher education programme; OMBT-1: In addition to the general information OMBT-1 (On My Being a Teacher) comprised 9 open ended questions on knowledge, learning and learners; Reflective Journal: The students, at the end of the programme write in their 'Portfolios' a reflective writeup, reflecting upon their journey throughout the teacher preparation programme; Reflective Diaries: Student teachers in the B.Ed. programme, as a part of the curriculum, are required to maintain diaries with the record of the happenings of each day during teaching practice; OMBT-2: In addition to the general information OMBT-2 comprises questions on their

beliefs about goals of Education, and how they may be met, their hopes, for their students and the like. The data has been qualitatively analysed.

5. Conclusion

Though the student teachers come to teacher preparation programmes with preconceived ideas about different aspects of 'education' and of essentially what good teaching is and how it can be achieved. The learning at teacher preparation colleges does have a positive and effective impact. Preservice teachers continue to develop their thinking and beliefs about various aspects of education even after they have completed the training programme and rather are able to confirm and accept their already conceived beliefs and theories rather than doing away with them or changing them entirely. One reason for this could be that the teacher preparation programme (B.Ed) is effectively only for a period of not more than nine months with only 30 days of teaching practice and at times with the problems like non cooperation from the schools and enforcement of regarding what, how much and how the 'content' should be imparted/taught, it becomes for practicing teachers an uphill task and a dilemma between theory and practice. Most teacher preparation programmes in India also rarely allow for reflective thinking as a result the students proceed with their earlier beliefs and later when these students go in for teaching as regular teachers, it becomes imperative for them to fall into line with what the usual practice is of what, how and why of teaching in that particular school. These new teachers, fresh from teacher education programmes, equipped with the 'very best' in training, actually lose what they had learnt. The rarely used metaphors and similes too while in training, are now commonly seen.

Teachers are responsible to a large extent of what happens in Education, it is important to study the factors that unconsciously influence teachers' behaviour and thus, influence students, whether negatively or positively. With the recent changes in practice and improvement in school practices our focus needs to be more on 'how teachers think' and 'how teachers' thinking affects classroom practices'. Teacher education programmes too can aim at enabling prospective teachers to reflect upon their own thought processes. The nature and development of the beliefs that students bring to teacher education should be explored It has been said that we ought to be interested in the beliefs of preservice teachers not because we wish these future teachers to have similar, appropriate ideas or beliefs or thinking, but because that they must be a focus of the dialogue in teacher education programmes. More research needs to be carried out in India in the area of teacher thinking especially its impact on student learning and

its implications for teacher preparation programme. Students in teacher education programmes must be given opportunities to reflect upon their actions. These reflections by the student teachers can be used to challenge preservice teachers' thinking and to expand their view about the nature and duration of the teaching-learning process. The teacher education programmes in India too deserve to be given a serious thought both in theory and practice to enable to produce a reflective group of teachers. More attention thus needs to be paid teacher thinking and its relationship to effective teaching in order to improve classroom practices and reduce student dropout.

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Peer Coaching: To What Extent can it Support the Development of Professional Attributes Required to be a Teacher?

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Abstract

Students on a science PGCE course were introduced to peer coaching. This article describes the structures developed to enhance student teachers' professional attributes and then reports the results. The students were given questionnaires to ascertain to what extent they felt they had developed their professional attributes as a result of being involved in peer coaching. The questionnaire design provided both qualitative and quantitative data. The evidence indicates that the peer coaching procedures had a positive impact on student teachers' professional development. Data was analysed and has been used to draw conclusions to inform peer coaching in an education setting.

1. Introduction

There are many aspects to learning to teach and PGCE courses present students with a range of professional, intellectual and emotional challenges. There are a variety of ways that students can be supported through their teacher education, one of which is mentoring. This is usually provided by both a college-based and a school-based mentor. However, there is considerable evidence that peer coaching can also help students in their journey to becoming a teacher. This article will focus on how peer coaching can be used to develop professional attributes particularly with regard to developing relationships.

There has been a significant shift in teacher learning towards a more reflective and collaborative approach to developing teachers' classroom practice. The revised standards for Qualified Teacher Status in England [1] recognised that collaboration and cooperative working (Q6), communication with colleagues (Q4), reflection (Q7) and an openness to coaching (Q9) were attributes that are important as a teaching professional. It was felt that by introducing the peer coaching methodology we would be enhancing student teachers' work

towards these standards and also to help them to shape their classroom practice.

It is widely recognised that PGCE courses and teaching in general have the potential to be stressful. With this in mind peer coaching was put in place to provide an extra level of support for student teachers new. Foltos [2] suggests "research shows that peer coaching methodology meets teachers' needs and is effective at shaping classroom practice" (p1). Russo [3] states that an important characteristic of professional development in schools is that it must be ongoing and deeply embedded in teachers' ongoing professional development. An underpinning rationale in our peer coaching methodology was to provide student teachers with opportunity for discussion and reflection to promote autonomous learning and improve their practice.

2. Theoretical background

Coaching and mentoring practices have been researched in a wide range of situations [4-6]. In general both these practices have been found to be valuable, although Sue-Chan and Latham [7] found that mentoring was the most effective. In University-based PGCE courses mentoring is well established and so an area that can be explored to enable students to develop is the area of coaching, and in particular, peer coaching [8-10]. Much of the research into peer coaching has been in a Continuing Professional Development [CPD] setting with experienced teachers [11-13]. It has been found in this setting there are certain key elements to promoting the effectiveness of peer coaching. For example, Cordingly [12, 14] found that peer coaching was more effective when it was collaborative. Similarly, the *National College for School Leadership* [15] argue that:

Coaching is grounded in five key skills:

- establishing rapport and trust
- listening for meaning
- questioning for understanding
- prompting action, reflection and learning
- developing confidence and celebrating success (p14)

Creasy and Paterson [15] refer to the work of Whitmore [16] who sees coaching as helping people bring out the best in themselves and their teams, this links to ideas on emotional intelligence. Matthews [17] argues that 'emotional intelligence' is defined to be comparatively individualistic while 'emotional literacy' is a fluid concept with its roots in equity. Hence the term 'emotional literacy' is closer to the requirements of developing a teacher's professional attributes. The link of professional attributes with emotional literacy is clear as one of the key features of peer coaching is that the people involved have an opportunity to engage in a genuine dialogue. This involves the ability to listen with empathy, look for common ground, probe ideas with compassion, be open to new ideas, identify challenges and to act as a critical friend [8-10, 13, 15]. However, this must occur irrespective of the sex, cultural background or social class of the participants, and so equity is a key feature of the emotional literacy component of peer coaching [17, 18].

Other writers pinpoint the key features of peer-coaching that reflect the importance of developing relationships. The GTC [8] draws attention to the importance of trust and support, enabling self-evaluation and development through the use of a focus on key moments and developing new teaching strategies. They also mention the importance of confidentiality and dialogue and the use of questioning to probe and act as a stimulus for thinking and reflection.

We produced guidelines [19] for student teachers to use to establish a working framework and build a relationship with their peer coach. Our key points were that peer coaching requires:

1. Mutual agreement
2. A commitment to dialogue
3. That self-reflection would be encouraged
4. Awareness of the peer's potential
5. Sensitive questioning
6. Awareness and empathy
7. Positive listening
8. Celebration of successes.

All of these contribute to developing their professional attributes and the associated parts of emotional literacy. Much of the literature on peer-coaching/co-coaching make similar emphases but there is a lack of exploration of just how the key features of collaboration /cooperation and emotional literacy can be developed.

3. Methodology

This study was designed to determine the effectiveness of peer coaching in supporting the development of professional attributes. Questionnaires were used to see if student teachers would respond positively to the process of coaching.

3.1 The participants

The participants were 38 students on a science PGCE course with an age range of 21 to 42 years. Of the 38 students, 22 were female and 16 were male.

3.2 The procedure

Students have a mentor in school and a college tutor to support them through their teaching practice. However, the purpose of the peer coach was to encourage student teachers to enter into constructive dialogues with their peers which would be supportive and open. Peers self-selected themselves at the beginning of the course. Coaching guidelines were shared with students and explained alongside a rationale of being involved in a peer coaching project. At this point it was decided that students would keep the same peer coach throughout the year to enable this relationship to develop.

The students had the opportunity to work together with their peer coaches during 8 college sessions. These usually involved some discussion guidelines to aid their conversations and help them to progress their learning. This enabled them to build a relationship with their peer coach before starting their school placements. They were also encouraged to meet during their self-study days and outside of college which many of them did.

3.3 The Questionnaires

Students were given one interim questionnaire after their first term and two questionnaires at the end of their PGCE course. Questionnaires were chosen as the research tool as they enable us to analyse responses from all the participants in the study and obtain an overall picture of the process. All three questionnaires consisted of short-answer and open-ended questions to encourage a range of responses. Opinion statements with a Likert scale response with bipolar adjectives on an 8 point scale was also used. The open-ended questions were framed to elicit data on such things as professional attributes while the Likert type questions would provide quantitative data. The

first questionnaire was designed to gain interim data on how the peer coaches had established their relationships. The final two questionnaires were designed to yield a more qualitative response with open-ended questions about the process of both being coached and coaching.

3.4 Data Analysis

All three questionnaires gave a clear indication that the students knew what they had to do and that they built up a good relationship with the peer, based on mutual agreement. Questionnaire 1 (autumn term) asked i) if they ‘completely understood the document on peer coaching’. This scored a mean of 7.0 out of 8 on the Likert scale. They were also asked if ‘the document was very useful’. This scored 6.4 out of 8 on the Likert scale. When asked how good their relationship with the peer coach was they responded by answering as follows:

Table 1. Relationship with peer coach (end of autumn term)

	Mean score out of 8
Relationship with the peer coach was very good	7.29
Usefulness of peer coach in developing written tasks	6.32
Usefulness of peer coach in developing teaching	6.94

During this period there was one peer coach who had been chosen by mutual agreement. By the end of the course many students had changed their peer coach, to someone who was in the same school or with whom it was easier to maintain a dialogue. At the end of the year a third questionnaire asked about the relationship with these peer coaches.

Table 2. Relationship with peer coach (end of summer term)

	Mean score out of 8
Relationship with the peer coach was very good Q1	7.66
The dialogue with my coach was very useful Q3	7.27

The results show a high degree of satisfaction with the peer coach. It increased slightly by the end of the course (Tables 1 & 2). This could be attributed to a longer period of peer coaching, where students were developing coaching skills as

well as their understanding of what it is like to be a teacher. The aim of this intervention was to develop student teachers’ professional attributes. Therefore as student teachers progress through the course we hope they will be able to communicate their ideas more clearly. Communication is vital for this process to be successful and opportunity for dialogue was a key theme to emerge from the second questionnaire. This is an interesting point to note as a small number of the coaches chose a peer to work with from a different course, or sometimes, even college or University. Where these peer coaches were more informal and had not gone through the training it was noticeable that they were generally given a lower rating, but due to the small numbers no real conclusion can be drawn.

4. Results: Skills and attributes developed through being a coach

Overwhelmingly the results focused on developing effective working relationships and this paper focuses on professional attributes rather than emotional literacy. Tables 1 and 2 show that student teachers thought their relationships were both positive and useful for developing aspects of their teaching. Peer coaching provided a forum in which student teachers could listen and discuss their practice in a different context – through doing this they not only developed their listening skills but also skills of giving advice (Q9), communication (Q4), sharing and discussion, reflecting on situations (Q7), thinking about others and appreciating the benefits of teamwork (Q6) [1]. Not only are all of these qualities important in developing emotional literacy they are also crucial in developing the professional attributes that teachers need in order to be successful. One of the emerging themes from the responses was that through peer coaching they had improved how they would interact and respond to others in a professional capacity – this is evidence, we believe, of improved emotional literacy and an evolving teacher identity. Below are two examples;

“Seeing how upset my friend was about the underlying attitude of his mentor, it was clear that the mentor, whilst not doing anything directly insulting, was causing him to be made to feel unappreciated and a burden unnecessarily. This mirrors feelings I had in my second placement but together we decided that our progress has been great, and we don’t need appreciation from

others, as we are going to be effective teachers in ourselves”

“A’s mentor was not fulfilling his role as a mentor and, by and large, neither was mine. From this, there was common ground to empathise and encourage one another to stay focused and get as much as possible from SE2”

A few cases, such as above, where the relationships between mentor and student teacher were poor the peer coach played a pivotal role. An impact of working with people who do not value you sufficiently can be a reduced capacity to feel confident. This is a complex attribute but Questionnaire 3 provided evidence that this was happening. The students were asked ‘What were the three most successful developments your coachee made’ the most regular answer (from one fifth of the responses) was in the area of being confident and assured. Other responses included related factors such as ‘being more positive’, ‘being more balanced so I could be more laidback’ and being more ‘secure’.

More evidence that the students had learnt to respond to others came in Questionnaire 3 where the students reported that they felt that their coach was able to pick up on their difficulties – giving a mean of 6.7 on an 8 point Lickert scale. Similarly, in response to the question ‘To what extent did your coach recognise your ability to develop’ on an 8 point bi-polar scale (8= a lot; 1= a little) the students mean was 6.4.

Another aspect was the development of listening skills and interestingly over half the participants felt that they had improved their listening skills through being a coach. One student commented:

“By listening to problems a person is going through it helps that person and I love doing this no specifics have to be said but I definitely learned to listen more”

This is interesting because as a beginner teacher, students often have to listen to advice and feedback about themselves. Learning from this experience and recognising critical learning moments as opportunities for peers to verbalise their thoughts requires skill and consideration. The responses illustrate that peer coaching is a process. It is more than just a chat or a moan but through the peer coach the students have another level of support that allows them to progress both

personally and professionally on the course. Another aspect of developing the ability to interact and respond is being able to reflect on all forms of practice:

“Evaluating situations – I found it important to be able to listen to a full ‘story’ when S was having difficulty with a technician and I listened to all of the points and came back with a different outlook and explanation and was able to explain it wasn’t only her in that situation”

This is a complex answer that indicates that the writer was able to empathise and use a reflective analysis. The general level that students felt that their peer coach had helped them be reflective was reported in Questionnaire 3 where the mean response was 6.6 on the 8 point Lickert scale. There was also a significant response about how the process of coaching helped with professional development including planning lessons, being organised with paperwork and improving subject knowledge. Numerous participants revealed occasions where they had jointly planned lessons with peers, a process they found to be beneficial to both their lesson planning, and classroom delivery. Peers would often help each other if stuck on particular things. For example;

“I met up with my peer coach to revise for the QTS skills test this was very helpful as I was able to look at the questions and we found easier routes to answering them, especially arithmetic”

Students who were fortunate enough to be in the same school found that they worked well as a team together;

“Me and M benefited from teamwork a lot. We observed and supported each others lessons on a casual basis. This helped us to reflect on our own practise and help each other out during lessons, especially with challenging classes. Also, it helped us get used to being observed unexpectedly”

“At the beginning of SE2 I had a series of ‘bad’ lessons. C offered to help me and we looked through my plans together. She thought I wasn’t planning thoroughly enough and made some suggestions. I changed how I planned subsequent lessons and it made a really big difference. I really appreciated the help.”

“I had a problem with two pupils in one class who were very difficult, when I told my peer coaches about this I was made aware of just how much this problem affected me, and my anger at the situation was causing more friction. By talking to others, it helped me realise this, so I was then able to be much calmer and positive to the students and diffuse problems with them.”

The students were asked ‘What do you feel have been your achievements?’ as an open list. They listed a wide range of factors that covered both aspects of interactions and professional development. The most common ones (from about one fifth of students) were ‘confidence’; ‘being more organised’; ‘and successful completion of the course’. Other common ones were ‘being able to ask for help when needed’ and ‘communication skills’; which collectively suggest that character traits for long term continuing professional development and the advancement of professional attributes into their first year of teaching would continue.

5. Conclusion

The student’s responses, both on questionnaires and from discussion throughout the year, indicates that the participants felt strongly that peer coaching was a success. One of the key themes is how important it is for students to be able to talk to each other about their progress and learn through these discussions. This supports a social constructivist approach to learning and encourages a learner driven climate where student teachers identify goals within their school context. Putting an emphasis on the teachers learning validates the learners (in this case teachers) pursuit to improve their practice and develop skills. Concentrating on the skills and not the individuals involved reduced the importance of sustaining a prolonged relationship with just one peer. In fact it was good to see that some of our students had formed peer relationships with PGCE students that were not on the science course, as this showed that they were able to transfer skills to foster effective working relationships with peers in differing contexts. The fact that they proactively sought out individuals with whom they wished to establish a peer coaching relationship with was a real success of this project. It illustrates that the student teachers really did value the support of a peer coach and they also recognised the capacity of a peer coach to identify areas of development, build confidence

and ultimately move their classroom practice forward.

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Identities and Training of Primary School Teachers: Realities and Challenges

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Abstract

This paper aims to contribute to an initial teachers' education that promotes life-long education and professional effectiveness, presenting a research carried out with the objective of relating curricula of initial teachers' education and the basic professional identities generated in them. Our aim was to know what kind of impact initial teachers' education curriculum had in the construction of professional identities. Furthermore, we aimed to understand which aspects of the initial teachers' education were specially related with particular aspects of the professional identities. This study involved one school of initial teachers' education located in Porto, one of the most important urban centres of Portugal. In order to characterize curricula we collected documents of four periods of time of the last thirty years of the 20th century. In order to study teachers' basic professional identities 40 biographical interviews were carried out. Four different teachers' basic identities were identified as well as the way how professional paths change these first identities.

1. Introduction

In this paper we intend to discuss the training of teachers of the first stages of the educational system focusing on the construction of professional identities. With Claude Dubar [1] we look at the construction of professional identities as a process that conforms to a double transaction - the biographical, of the subject with him/herself, between who he/she has been and wants to be; and the relational, between the subject and what is offered in the training and work contexts, 'offers' that can challenge or inhibit the ways he/she wants to be. Despite the fact that in the contemporary world much broader (if not unlimited) possibilities of being exist, expectations and desires interact with representations of the professional role that are more prominent in the culture or groups of belonging and reference, originating what Claude Dubar [1] calls forms of identity, which result from the interactions between the person and the

institutional, social, or organizational structures as a function of identification, differentiation and opposition processes. Identity forms are limited in number and correspond to the possible social positions where different subjects are brought together.

Data was collected through the analysis of documents and biographical interviews of teachers that had their initial training at the same institution (in the city of Porto) at four different historical moments: the first half of the 70s (before the Carnation Revolution), the second half of the 70s, the 1980s and the 1990s. For the purpose of this paper only the biographical part of the study will be taken into account. Ten teachers from each historical period were interviewed.

The biographical interview was organized as a semi-structured interview, having as fields the different personal and professional periods of the interviewees' lives - the path before the training, the period of the initial training and the path after the initial training.

2. Analysis and interpretation

Four central dimensions will be the focal points: choice of profession; professional socialization; meanings of being a teacher; and perspectives on school knowledge.

2.1. Choice of profession

The 'choice' of the teaching profession is placed, for the teachers of these educational levels, in a social climbing process. The training course for student teachers, whether in 'Escolas Normais' or in higher education institutions but without conferring the degree ('bachelor'), becomes attractive given the prestige that is given to the profession when associated with the conditions of access, study and professional exercise, considered easy and particularly appropriate for women. The influence of parents is noticeable and indicates a social climbing trajectory.

[...] the parents said: «Look, you go because it is a nice course for a girl». (Interview nr 30, course of 72/74).

Clearly, for social groups of lower buying power, the pragmatic aspect held by the possibility of achieving professionalization by concluding an intermediate level course (teaching diploma) is associated to the prestige that those groups attribute to the profession. In this relationship between the social and the symbolic that so fairly characterizes the choice of a teaching profession; one can observe, in many of the statements of the female teachers, the process in which a sense of mission, vocation or talent, seen as particular to their profession, is appropriated.

I always wanted to be a teacher, so, then already [primary school] I would say that I wanted to be a teacher, I remember I would pay a lot of attention [to my teachers] and identified [with them]. (Interview nr 21, course of 93/97).

About half of the interviewees indicate having chosen the profession feeling a complete absence of vocation, and a higher number of references to vocation appear as the choices based on criteria of easiness diminish.

In the interviews there are also statements showing that in their process of choice of profession some female teachers were influenced by the examples of good or bad teachers, through processes of identification, differentiation or opposition.

I had only one teacher from the first till the fourth year, she was the director of the school, she was a person... I can say she is my idol, she has always been, I think since I was six years old the only thing I wanted to be was primary school teacher, I never considered being anything else [...] a lot because of her influence [...]. (Interview nr 17, course of 73/75).

In short, the data seems to indicate that elevating the level of training when associated to forms of recruitment and selection that minimize the choices based on easiness increases the number of choices by 'vocation'. The patterns of choice or decision show the will of this historical and social group in giving the profession an affective character (against its authoritarian tradition).

2.2. The process of socialization of teachers: training and first years

The interviewees devalue the formal curriculum in their training which they perceive in terms of

subjects. For the interviewees, the informal curriculum is the one they effectively recognize as having had a training result and it concerns especially learning that happened outside the classroom, even though, here and there, it also regards learning that took place in the classroom. Those resulting from the peer group, from teaching reflection meetings between teachers and students, from areas of the curriculum not considered to be subjects (disciplines) and those intrinsic to the teaching-learning process in classes are the ones that stand out. In general, for the interviewees, the 'value' of their initial training is connected with its practical character, concerning the experience of teaching children (internship, autonomy in the teaching practices, going beyond the plan), the ways of teaching-learning, the areas of expression and the professional/academic character of the training (centred or not in the profession). The relevance of the training for the contexts of action is considered higher by those trained in the revolutionary period (professional training) and lower by those trained in the 1990s, indicating that the integration of teachers training in higher education institutions made the training more academic.

The transition from the situation of student to a professional situation comes as a decisive stage in the passage of life of those interviewed, given the contradictions between the conceptions of education propagated by the training period (evident in the visions of oneself as a person and as a professional at the end of the training) and professional practice. This discrepancy leads teachers who are at the beginning of their career to adopt strategies of survival and control, generating a lack of investment in their profession, above all if the idealized future and/or the representations of the ideal school that they still possess vanishes and in its place appear disenchantment, insecurity and the consequent routine nature of teaching:

I had to change the idealistic vision that I had of the profession. (Interview n° 5, course of 1994).

I left with some ideals, some of which I had given up on. Some adaptations had to be made! (Interview n° 8, course of 1996).

When leaving the course I had certain expectations that I didn't achieve at all! [...] My greatest anguish is to have to give up or to relegate some of my ideas to second place if I find that I am not going to carry them out and to verify that there is some contradiction between what I do and what I think. (Interview n° 9, course of 1979).

I was very lonely and the distance between what I experienced in the initial training and the reality that I had to face was so frightening that I

didn't know what to do, except put my head between my hands! (Interview n° 12, course of 1981).

2.3. The meanings of “being a teacher”

For teachers who received their training in different periods, four base identities are identified that currently structure conceptions of being a teacher:

a) identity centred on an education of austerity and conformism type;

b) the identity centred on the professional who is the affective and transforming type;

c) the identity centred on an education of a type which is technical-affective and innovative and;

d) the identity centred on the learning of a cognitive and civic type.

a) These teachers define their activity above all on the task of teaching in the primary school, which they perform in an atmosphere of austerity. There exists an awareness of the existing relation between the environment of training that is undergone, which is this type of education, and an authoritarian society.

b) This identity seems to have been constructed in inevitable opposition to the identity of the previous period: the affective environment in the place of austerity and the transformation of the place of conformity. The transforming dimension appears here to be a product constructed in the training relationships, where the focusing on the child is associated with social change: it is about improving the conditions of life and expression of the most disfavoured children. The appearance of the “identity of professional” in the place of the “identity of education” seems to indicate that the teachers trained in this period base their identity on the awareness of the necessity to dignify their profession.

c) This identity is once again centred on the teacher as someone that teaches but who is also concerned about improving this task and taking care “to be present” in the pupils’ lessons: by trying to master the instruments of education related to learning and creating a climate of pleasant learning. The references concerning innovation and education for values in this identity are part of the mainly instrumental position that distinguishes this identity, but bear little relationship to the awareness of the social relations underlying the educational relationship.

d) These teachers see their teaching activity more in the light of the learning to be carried out by the pupils rather than according to what the teacher has to teach them. The aim is that the pupils acquire the capacity and the will to learn. Here one feels a strong influence from the constructivist perspectives in the formulation of the model of this

identity. The relation with society seems now to assume a greater sense of consistency, with references to education for citizenship and democracy, but as an extension of a scientific representation of the teaching-learning process and not as a conscientious decision about the social relation underlying the educational relationship.

2.4. Teachers and school knowledge

It is evident that soon after their professional initiation, the base professional identity undergoes a process of *re-composition* that varies from one person to another. In general, the construction of the teaching profession and consequently, of their professional identity, seems more than anything to fit into an informal, individual, intuitive process, carried out in the day to day activity, that is to say fundamentally in terms of the pedagogical relationship in the context of classroom (the resource that Montero Mesa [2] designates by latent models) and in the contact with their peers (in explicitly rewarding situations, most of them in situations of discrete suffering). This idea seems reinforced by the devaluing effect that the majority of the informers attribute to their initial training and to continuous training.

Relations with children is the main source of attachment to a profession that, in practice, is economical with specific professional knowledge to their profession, to adopt the traditional forms of pedagogical work that continue to characterize school cultures, to which are associated traditional concepts about school knowledge.

3. Conclusions

Two aspects show up from the results of this work: on one side the way ideas and practices transmitted in training and by social changes affect the construction of the identities of the teachers; on the other the realisation of the existence of two important models that have an influence on choices and also the different ways of being a teacher: the traditional and the critical or innovator.

Apparently the ideas transmitted by training and social changes add new transforming elements to the identities, identities that in the meantime revolve around two central nuclei: innovation and tradition.

These two forms of identity - which also attract other elements derived from social changes and the challenges of training - have a parallel in the teachers as people (where the ideal professional and the more down to earth maintain a difficult relationship) and in the relations between training – which is a transmitter of new perspectives - and the real contexts of work - where traditional ways of work prove to be difficult to modify.

In these, the traditional vision of school knowledge is still imposed, demonstrating the importance, given our advance towards the information society, to reflect on the construction of teachers' professional identities about the first years of the basic school education in the context of training and the contexts of work.

The results also give us the topics for this reflection: on the one hand it would be a matter of placing this diversity in the place of the duality revealed, whether it be a traditional form - or else the other - innovative or critical – as both feed on the same lack of realism (one for too much idealism, the other for too little idealism); on the other hand, to go and look to the peripheral elements that are associated to these two forms of being - coming from social changes and from training - the bases for the construction of this diversity.

As far as the part of the training is concerned, we should raise the level of training without making it too academic, but instead making it more relevant for the contexts of work. With regard to the work contexts it is a question of being bold enough to give up for good conceptions about knowledge, and to adhere to ways which are more active, meaningful and part of the knowledge of daily life. This is for reasons linked to the direction of the school, for reasons linked to social and human rights that are associated to it, and for reasons linked to the development of the knowledge society.

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Factors for the Sustainability of a Teacher Professional Development Program for Technology Integration

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Abstract

The question which factors determine the long-term effect of programs and initiatives for improving teachers' technical and methodological competencies for integrating technology in the classroom is discussed in the context of the teacher professional development program "Intel Teach – Advanced Online". The external evaluation of the program provides evidence about the factors on personal, school and system level, which contribute to or impede the sustainability and successful implementation of the program. The analysis of the findings points at some areas for improvement, such as the communication and presentation of the program, its character and outcomes; the role of school tutors and principals, but also factors to capitalize on, such as the collaborative work of teachers. Understanding the comprehensive set of factors and how they affect the success and sustainability of a program is advantageous not only for the enhancement of the presented professional development, but for planning similar initiatives as well.

1. Introduction

The recent evidence of persistent high demand for teacher professional development in the area of technology-enhanced teaching and learning [1] raises the question which factors determine the long-term effect of programs and initiatives for improving teachers' technical and methodological competencies for integrating technology in the classroom. Major importance for the successful adoption of new practices by teachers and for positive outcomes and acceptance of a program for professional development have its design and implementation. Maintaining these outcomes over time, however, is influenced to a large extent by the teachers and by the conditions in which the program is carried out. Improving the sustainability of a program for teacher professional development in this area seems to be directly related to following effective design

principles and to understanding and influencing the external factors in the specific context of its implementation. Assessing how characteristics of the program, the teachers and the context affect effectiveness and outcomes provides means to take measures to prevent or counteract negative influences of the context and to strengthen and capitalize on positive conditions.

2. Sustainability of Technology-Based Educational Change

Research in the last two decades has yielded consistent evidence for the factors and components, which contribute to effective teacher professional development in use of technology. Effective programs are sustained over time, have at their core professional learning teams for collaboration, involve teachers in solving authentic problems related to teaching and learning, deepen teachers' pedagogical skills and include opportunities for practice, research and reflection [2]. Successful professional development programs are aimed at the improvement of student performance, involve teachers in determining the focus of their learning and provide them with learning opportunities that are school-based, continuous and supported, information rich, and facilitating theoretical understanding and collaborative problem solving [3]. Integration of technology in the classroom is also strongly influenced by the external support for teachers, their access to up-to-date resources and participation in a community of teachers working with technology [4].

In parallel, effective teacher professional development is only one of several necessary but not sufficient conditions underlying sustainable innovative teaching practices using technology [5]. Further conditions are teacher, student and administrative support, as well as the perceived value of innovation. Funding, teachers who drive innovation, support within and outside school and supportive plans and policies are conditions which contribute to the sustainability of technology-based educational change. Specific role have also the

unique attributes of technology, such as costs and maintenance, rapidly changing nature and specialized knowledge and skills required [6]. From a more general perspective, sustainability in educational change involves maintaining improvement over time, learning gains for everyone, and not only a few, support by attainable or available resources and opportunities for diverse solutions and flexibility [7]. Additional elements seen as essential for sustainability of technology-based innovation are culture of learning at all levels of a system and leaders who drive the change [8].

In summary, key design components of effective professional development programs are opportunities to learn and practice innovative approaches over prolonged time, to work collaboratively on authentic tasks and to influence the choice of activities toward addressing the individual learning needs of teachers. At the same time a program based on these principles becomes sustainable only if there are advantageous conditions, such as support by teachers, students and administration, from outside school and through plans and policies, leaders or teachers who drive the innovation, available resources and appreciation of the direction of change.

Against this background, the factors which influence the successful implementation and sustainability of a professional development program are specific in every case and actions for improvement can be taken only after assessment of the specific context and system. Focus of this paper are the findings from the evaluation of a teacher professional development program for integrating technology in the classroom, and particularly the identified factors for its sustainability. The program Intel® Teach - Advanced Online was developed based on established effective design principles and its quality assurance evaluation showed generally positive outcomes. However, the different patterns and outcomes in the contexts in which the program was implemented revealed its strong dependence on external factors. Qualitative investigation of these factors points at areas, which can be influenced in order to improve the sustainability of the program and its impact. Since the detailed results of the external evaluation of the program have been reported in detail elsewhere [9], [10], the aim of this paper is to discuss the findings in the context of the program design and possible measures for improvement. For this purpose it will provide an overview of the design and implementation of the program, summary of the evaluation findings and implications for its improvement.

3. Intel Teach - Advanced Online

The teacher professional development program Intel Teach - Advanced Online is one of the projects, designed and implemented within the Intel®

Education Initiative - an endeavour of Intel Corp. towards advancing education as a major component of its Corporate Responsibility actions. Programs within the initiative comprise of teacher professional development projects, formal and informal technology-enhanced learning opportunities for students, science and technology competitions and talent search, and higher education projects.

One of the main components of the initiative is the Intel® Teach Program - a professional development program aimed at training classroom teachers to effectively integrate technology in instruction to enhance student learning, developed in collaboration with Ministries of Education and educational institutions. The program is provided to elementary and secondary school teachers around the world and encompasses a portfolio of courses targeting different aspects of integrating technology in classroom teaching, such as classroom software productivity tools and student-centred approaches to learning; integrating technology into existing classroom curricula; using online tools to enhance students' higher order thinking skills; and advancing teachers' methodological skills.

3.1. Design and Implementation

The program Intel Teach - Advanced Online was developed in Germany, following the successful implementation of a basic course for technology use in teaching. The concept for the advanced course was developed by the Academy for Teacher Professional Development and Personnel Management in Dillingen (ALP) - a state-owned Teacher Training Centre belonging to the Ministry of Education in Bavaria, Germany [11]. It was subsequently localized and implemented in England, France, Ireland, Israel, Italy and Jordan. The program is based on blended format of face-to-face meetings and individual and collaborative learning supported by an online platform, which enables self-paced on-the-job professional development. Participants in the program are guided and assisted in the training process by mentors (Master Teachers), who have expressed interest to become mentors and have received special training for the program by regional Senior Teachers to provide instruction and support. This "train-the-trainer" approach enables a high degree of support, through the presence of mentors in the schools and communities of the participants in the program.

The professional development process in Intel Teach - Advanced Online follows a step approach. After registration for the program teachers are introduced to the concept and content by a trainer in a face-to-face meeting. The next steps include using the online platform to study the available methodological information for integrating technology in a learner-centred classroom and

example materials, and discussing in groups the requirements and objectives of the training. Teachers select a focus for their training from the possibilities available on the online platform, based on their personal professional needs. This pedagogical framework is called 'Learning Path' and within it teachers use a selected pedagogical approach or certain technological tool to develop a unit plan, implement it in their classroom practice, evaluate it and enhance it for further use. Every learning path is either driven by its pedagogical approach or by the application of specific digital media, e.g. data handling and data analysis; using digital technology to allow students to work collaboratively online. Learning paths can be chosen by subject, by concept (e.g. task-oriented, inquiry, hands-on, etc.), by various teaching methods and learning styles. The program curriculum consists of a minimum of one learning path, while the participant teachers are free to choose to work on more paths. The intended distribution of time for completing a Learning path is 8 hours for introduction to the concepts, methods and technology, 12 hours for working on a Learning path collaboratively with other teachers, and 20 hours of individual learning using the available online resources and tools.

The platform is customized for the countries where it is implemented, with several main areas to suit personalized needs at a particular time: areas for work with the learning path and areas with resources, collaborative tools, additional information and online support. The platform uses simple open source tools by collating and making available open source and free software tools to enable material creation. It is based on PHP technology, reflecting the desire from educational settings to adopt license-free solutions. Using the training platform is flexible and teachers have the choice to participate in the training from home or from school, depending on their preference and technology availability. Teachers also can access the platform after they have completed the program and use the available resources, ideas, unit plans and materials for self-directed learning.

In order to complete the chosen learning path, teachers work collaboratively with other teachers. The majority of their learning is done either in collaboration with their team, or individually, and is extended over a period of time. When teachers develop an effective method that is working very well in their teaching and has shown good results with their students, they are encouraged to share it through fitting the method within the pedagogical template and then positing it on the platform for other teachers to benefit from. Teachers also evaluate their learning individually and collaboratively and plan for further enhancement and extension, which provides them at the same time with knowledge how to embed research and continuous evaluation in their day-to-day teaching.

3.2. Evaluation

The programs of Intel Teach are subject to systematic external evaluation for determining the direct effects of the training. The evaluation of the implementation of Intel Teach - Advanced Online in Germany in the period from 2005 to 2008 was conducted by the Institute for Media and Educational Technology in the University of Augsburg [9]. The main aim of the evaluation was to provide information base for the continuous improvement of the program and the focus shifted from quality assurance in the earlier phases of implementation toward sustainability [10]. The first phase of the program evaluation was based on an online, self-report end-of-training survey of teachers who complete the program, self-report surveys of mentors and surveys of teachers and university students at the educational fair Didacta 2006. Overall, the evaluation findings as reported in detail elsewhere [9], showed that the program has a positive impact on teacher attitudes, competencies and practices of classroom technology integration. Four-fifths of all participants declare that they have more ideas how to use digital media in their teaching. Nearly three-fourths of them significantly increased their confidence to use new media in the classroom and would recommend Intel Teach – Advanced Online to other teachers. Regarding the impact on their practice, teachers report slight improvement of the quality of their teaching. Regarding the indirect effect of the program on students, teachers report increased motivation in technology-enhanced classes, while the assessment of possible increase in students' skills is more conservative, but reported by over half of the participants.

4. Factors for Sustainability

A preliminary investigation for determining the conditions of implementation in the different federal states included online questionnaire of open questions sent to regional mentors of the program. The findings showed that the effectiveness of the program cannot be improved only through changes in the program design. In order to determine the external factors influencing the success of the program and its sustainability, in 2007 case studies of schools ($n=16$) in four federal states in Germany have been conducted through interviews and group discussions.

4.1. Concept

The evaluation concept reflects the difference between the conditions on the level of the individual school and on the level of the school system [10]. On the level of the individual school sustainability of a

teacher professional development program represents the degree to which the program produces changes locally. Here it is differentiated between improvement of teaching practices, staff development and organizational development. Sustainability in the first two areas is demonstrated when participating teachers achieve a lasting improvement of their competencies and teaching, and when a large proportion of the teachers in a school have participated in the program, form a community of practice and increase the collaborative work in the school for integrating digital media in teaching. Sustainability in regard to organizational development is evidenced by adoption of direction toward technology integration as a regular part of the educational practice. This is realized not only through improvement of the teaching and the staff, but also of the technical infrastructure, time, class size, conditions, school focus and support from school mentors and leadership.

On system level sustainability of a professional development program is demonstrated by the extent to which the professional development concept is accepted and implemented by different schools in an administrative region persistently. Necessary conditions for sustainability are the participation in the program of a large proportion of the teachers in a schools, teachers' positive attitudes and satisfaction with the course, availability of support and transfer of the goals, content and methodology of the program. Further conditions are the sharing of experiences among teachers and the promotion of teacher competencies and practices facilitated by the program as regional and school standards in a systematic way, including through backing up with evidence of positive outcomes from the program evaluation.

4.2. Method

The study was conducted in 2007 and 2008 through case studies of 16 schools in four federal states in Germany, with target population teachers in these schools who participated in the Intel Teach – Advanced Online program ($n=40$), teachers who did not participate in the program ($n=24$) and school principals ($n=15$). The chosen federal states represent the policy of regional and region-wide mentorship and included Bavaria, Thuringen, Rheinland-Pfalz and Hamburg. Schools were contacted through regional mentors and took part in the study on the principle of voluntary participation. Individual interviews with school tutors and school principals, and group discussion with participant and non-participant teachers were conducted in 14 schools. The majority of the interviewed teachers had completed the program one or two years before the study. The questions of the interview regarded general attitude to professional development, the

school context and the program Intel Teach – Advanced Online.

The analysis of the interviews and group discussions was conducted divided by school and federal state. From the resulted categories and sub-categories, the ones, which were found in all schools in a federal state and in all federal states were summarized (Figure 1). Additionally, the opinions of Senior Mentors from the federal states were collected through group discussions and written comments. This additional perspective allowed to confirm or adjust the interpretation of certain factors.

4.3. Results

Advantageous personal factors for the sustainability of the program Intel Teach – Advanced Online are good experiences with the prior basic course offered before the advanced program, deepening of the already acquired competencies and inclination to and interest in digital media. Lack or insufficient experience with digital media, lack of interest in the objectives of the program, uncertainty of the added value of the program, and low relevance of the certification for career advancement are identified as factors with negative effect on sustainability.

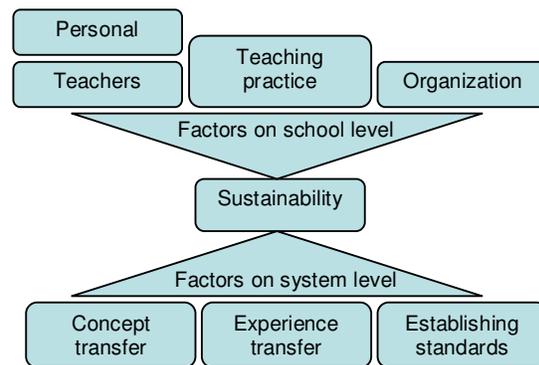


Figure 1. Factors for the sustainability of the program “Intel Teach – Advanced Online”

At the level of the individual school, faculty-related factors are positive experiences with the collaborative work with other teachers, good organization of the team work and time for teamwork. Regarding teaching practices, factors for the sustainability of the program are acceptance of the didactical concept, perceived learning gain, engaging in reflection on own teaching, experiences with the added value of digital media in teaching, time for use of digital media, interest of the students in learning with digital media, prior knowledge and skills of students, and solutions for handling class size. Organization-related factors identified in the study are the support by school mentors, information

and motivation of the teachers, available technical infrastructure and maintenance, support by the school leadership, alignment of the program with the objectives of the school focus, and participation of a higher proportion of teachers from the school in the program.

At the level of the school system the factors are grouped in three categories: concept transfer, experience transfer and establishing of standards. The notion of concept transfer relates to statements that the school-political developments in a federal state can be both beneficial and hampering. Further factors in this group are related to the mechanisms for and success in reaching the target population of the program, as well as communicating the objectives and nature of the program effectively (Table 1).

Table 1. Beneficial (↗) and impeding (↘) factors for sustainability regarding transfer of the program concept on the level of the school system.

Factors related to development of school policy
↗ Digital media as component of curriculum and lesson plans
↗ More autonomy of the schools
↗ External evaluation for quality development
↗ Demand due to professional development requirements
↘ Low value of digital media in teaching
↘ Workload due to restructuring of the work
↘ Search for training according to needs only
Factors related to reaching the target population
↗ Alignment of the program with the objectives for professional development
↗ Use of flexibility and creativity
↗ Mentors integrate different functions
↗ Teachers are well informed about the program
↗ Reaching the group of teachers not interested in technology
↗ Recommendation of the program on the base of positive experiences
↘ Objectives of the program do not represent current school policy of the federal state
↘ Demand regulates the frequency and place of the program presentation
Factors related to the program presentation
↗ Stimulate interest with presentation of content
↗ Preparation of the school mentors for their role
↘ Insufficient staff to organize program presentations
↘ Absence of mentors

In the context of experience transfer, sharing of practices between schools was not supported in the federal states participating in the study. Sharing of experience, which affected the sustainability and successful implementation of the program was realized within schools as continuation of the

teamwork during the program. The last factor on system level is the establishment of standards, which relates to the systematic implementation of professional development requirements and technology integration policies within and across federal states. Due to the differences in federal policies, school autonomy and conditions in schools, the transfer of experience and the establishment of standards cannot be influenced to a degree to improve the sustainability of the program. This can be achieved mainly through influencing the factors related to concept transfer.

5. Conclusions and Discussion

Identifying the factors, which contribute or on the contrary, impede the sustainability of a professional development program, allows to draw a comprehensive outline of the beneficial external conditions which can be strengthened, and the negative conditions which can be improved. Although certain elements of the specific context in Germany, such as federalism and large differences in regional policies and practices, cannot be changed, some factors in the area of concept transfer and on school level can be easily influenced in order to improve the sustainability of the program and its further implementation. Firstly, communicating the character, prerequisites and outcomes of the program in a more clear way and to a broader audience of teachers and school principals can have a significant positive effect. Similarly, the example of tutors and participant teachers and their attitude and satisfaction with the program has a strong influence on the interest of teachers, who have not participated in this professional development offering. Strengthening the presentation of the program to teachers with demonstrations of the learning process and the available resources and support will be beneficial. However, the exact way to realize that in a way accepted positively by teachers is not clear. Further investigation of teachers' preferences for media and format of such communication and presentation of the program, for instance online or face-to-face, can contribute to the planning of measures for improvement.

Second group of factors, which can be positively influenced is related to the school organization and the role of tutors and school principals for the successful implementation and maintenance of the program. Actions in this direction can be stimulating more teachers to take the role of tutors through incentives, as well as providing more information to school leadership about the positive findings of the program evaluation about improved teacher competencies, increased use of technology-enhanced learner-centred teaching, and higher student motivation and interest. The importance of effective teamwork during participation in the program can

also be capitalized on, through improving the conditions and support for collaborative work within the program design.

The outlined findings and implications about factors which influence the sustainability of the teacher professional development program Intel Teach – Advanced Online provide limited evidence for generalization. However, it can be speculated that a similar program for technology integration will be affected in a similar way by the contextual conditions if implemented in Germany. In this respect understanding of the comprehensive set of factors and how they contribute or impede the success and sustainability of a program can be advantageous for future planning of such initiatives. Thus, improving teacher professional development offerings will be more successful if it includes not only design and implementation adjustments, but also measures to influence the context.

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Session 4A: Curriculum, Research and Development

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A Confirmatory Factor Analysis of Promoting Enjoyment in High School Students' Learning

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Abstract

The aim of this study was to investigate factors which promote the enjoyment of learning in high school students. The participants consisted of 331 ten to twelve grade students, between 16 to 18 years old from government and private high schools and colleges in the second semester of academic year 2007, obtained from the multi-stage random sampling technique. The research instrument was a rating scale Questionnaire, with α -coefficient = .97. The data analysis employed descriptive statistics and CFA. The result of this study revealed the weights of the nine factors involved in the promotion of enjoyment of learning ranged from .61 to .90 at the .01 level of significance. The component weights of school management, instructional management, teachers' characteristics, students' support, student, living with others, community, family and friends with component weights were .90, .89, .87, .84, .78, .76, .68, .67 and .61 respectively. The most significant component was school management in term of importance. The hypothetical model was good fit with the empirical data with the goodness of fit index Chi-square of 2546.97, $p = .66$ at an degree of freedom (df) of 2578, GFI = .83, AGFI = .75, CFI = 1.00, RMR = .061, RMSEA = .00

1. Introduction

Learning and teaching in the classroom not only focused on the students' competency, and morality, but also happiness during studying. These 3 characteristics were being competent, should occur in students at the same time which would support good and efficient learning. As a result, the quality of human resource would be affected in the future.

In order to encourage the students could study happily, it was very necessary to know that which factor supporting and promoting the enjoyment of learning would be composed of, including which component and indicator, and which one was much or less important. It would be important matter for planning and designing various processes in order to promote the students for enjoyment learning. So, it was the cause of this study.

2. Conceptual Framework

This research conceptual framework rely on [1] study, "Development of Indicator promoting the Level 4 Students' enjoyment learning under The Office of Udon Thani Educational Service Area 4" It was applied by developing the indicator promoting enjoyment learning with Students Based Study and developed the indicator from documents and related literature review, the students' responding the open ended questionnaire, the students Focus Group Discussion, investigation by the experts, and factor analysis, found that there were 87 indicators enhancing enjoyment of learning, grouping into 9 factors including: family aspect, friend aspect, community aspect, student aspect, teachers' characteristic aspect, school management aspect, instructional management aspect, living with the other aspect, and students' support aspect.

3. Research Methodology

Sample: The sample of this study were 331 students studying in senior high school (Grade 10 to 12) during the second semester of 2007 academic year in schools and colleges in Tasmania City, Australia. They were selected by Multi Stage Random Sampling from public and private schools including small, medium, and large sized schools.

Research Instrument: The research instrument of this study was the questionnaire as 5 level Rating Scale adapted from Songsak Phusee-orn and Prinya Ruengtip' [1] questionnaire of indicator for enjoyment of learning. It was tried out with 32 senior high school students (Grade 10 to 12) in Tasmania City. Its quality was analyzed, reliability coefficient for .97 based on Cronbach's Alpha Coefficient.

4. Research Finding

The Confirmatory factor analysis revealed the factor promoting the Senior High School Students' enjoyment of learning: A Case Study of Australia including 9 factors including: school management factor, instructional management factor, teacher'

characteristic factor, student' support factor, student factor, living with the other factor, community factor, family factor, and friend factor with factor loadings of .90, .89, .87, .84, .78, .76, .68, .67, and .61 respectively. Every factor loading was significant at .01 level as shown in Table 1.

Table 1. Factor loading of factor enhancing students' enjoyment of learning.

Factor	Factor Loading	R ²
A : Family Factor	.67**	.45
B : Friend Factor	.61**	.37
C : Community Factor	.68**	.47
D : Student Factor	.78**	.60
E : Teacher's Characteristic Factor	.87**	.75
F : School Management Factor	.90**	.81
G : Instructional Management Factor	.89**	.80
H : Living with the Others Factor	.76**	.57
I : Student' Support Factor	.84**	.70

Goodness of fit statistics shown the Chi-square was 2546.97, $p = .66$, $df = 2578$, $DFI = .83$, $AGFI = .75$, $CFI = 1.00$, $RMR = .061$, $RMSEA = .00$, indicating that the model consisted of construct validity and it was congruent with empirical data.

5. Conclusions

The factor enhancing The Senior High School Students' enjoyment of learning in Australia, it consisted of 9 factors ranking in order by factor loadings from high to low including: school management factor, instructional management factor, teacher's characteristic factor, student' support factor, students factor, living with the others factor, community factor, family factor, and friend factor.

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The History of the Botswana History Curriculum and the Elusive National School History

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Abstract

Colonial history teaching in Botswana was defined by the prevailing political discourse, which placed imperial history at the core, and generally sidelined local indigenous histories. However, the situation was mediated by the fact that Batswana traditional authorities were collaborators and partners in the colonial socio-political discourse, which ensured the gradual accommodation of hegemonic Tswana epistemologies into the history and social studies curricula. Moreover, as anthropological research increasingly influenced adaptive educational curricula, indigenous socio-cultural issues were integrated into the school programs and activities. However, it was the histories of the dominant ethnic groups, championed by the indigenous leadership in collaboration with their colonial partners, which gained their way into the colonial and post-colonial books and classrooms. In post-colonial Botswana, the government internally colonized the curriculum, in a climate characterized by an anti-tribal rhetoric. This increasingly placed emphasis on a monolithic, mono-ethnic and homogenous school history, in line with the national development policy and practice which generally subscribe to an undifferentiated development policy. The study is based on analysis of archival documents, including syllabi and textbooks.

1. Introduction

Following the colonization of the Bechuanaland Protectorate, the colonial government recognized only eight principal ethnic groups, which were given prominence by various colonial practices and policies. For example, the colonial government had elected to apportion land according to a system of reserves, which were assigned to particular *dikgosi* (chiefs) of the recognized (usually numerically) superior ethnic groups. This system had no inbuilt

provision for recognition of groups that were either had no *dikgosi*, or which were otherwise regarded as “subject” groups even if they had distinct areas of their own land, distinct cultures, traditions and histories. They were simply all lumped for administrative convenience, and all deliberations were conducted with “principal” *dikgosi*.” Although they were a colonized people and had many of their powers circumscribed, Batswana *dikgosi* were partners to, and collaborators with the colonial government on many issues. Proclamations number 34 and 35 were particularly far-reaching in terms of changes to the hitherto unfettered powers of *dikgosi*.

The division of Batswana land into reserves further consolidated the control and authority of Batswana principal groups over the “subject” groups, where the latter was placed under the custodial overlordship of the former. Up until 1934 when their powers were curtailed, *dikgosi* had enjoyed a period of relative and collaborative engagement with the colonial government, where few if any stops were placed on their overlordship of other *merafe*. Following the report of the Masarwa Commission set up to investigate the general treatment of Basarwa, chiefly rule remained generally unfettered.

2. History Teaching and the Political Context

The colonial discourse generally placed the royalty of the dominant groups and their functionaries at the centre, whilst the histories of the peripheral groups were entirely excluded or misrepresented, where featured. Thus, whilst pre-colonial Tswana society had begun to manifest ethno-cultural differentiation, colonial discourse further exacerbated it. Generally, the context and content of history tended to reflect the broader socio-political milieu. Accordingly, much of the history that was taught during the missionary and colonial periods reflected firstly, Britain’s political hegemony over the inhabitants of

Bechuanaland Protectorate, and secondly, Tswana hegemony over the subject groups. History was also taught as part of a general social studies course. The history content primarily featured the history of Britain and church history, with an emphasis on bible lands and the colonial process, from a purely Eurocentric perspective, as something that was necessary for the colonized peoples. Colonial texts did not reflect the protests of some of the *dikgosi* against colonization. In this context, Batswana were presented monolithically, as a people with a singular identity deriving from their purported common origins, which regarded them all as originating from a common founder, Masilo. Historical versions of Batswana origins in the education system up to the current period still perpetuate this common singular perspective on Batswana origins.

As education became more entrenched, colonial education policy also began to recognize the efficacy of engaging Batswana in the formulation of curricula, and gradually there were opportunities created for teaching of the history of Batswana. Although Bechuanaland Protectorate history began to be featured in history syllabi, it was only taught from the perspective of the dominant groups, as they were the ones who sat in the national bodies with the colonial government officials and the missionaries.

After independence, this lopsided perspective of school history gradually began to be questioned, albeit from a neo-liberal perspective, and as part of a general trend towards (writing) Africanist (and national Botswana) history. It is important to highlight the fact that generally, the post-independence policy makers only lamented the alienating and what they termed the colonial nature of the history curriculum, and urged a reorientation of the subject to ensure relevance to the Botswana context. However, they did so only in order to decolonize the curriculum rather than to make it ethnically inclusive. The texts by Blake and Haliburton [1] to a large extent, and Tlou and Campbell [2] to a less extent are cases in point.

In the postcolonial period, there have been attempts to incorporate other versions [3, 4, 5] of the written history of Botswana, which reflect the prevailing socio-cultural revival. The basis for this revival is the growing assertiveness of the so-called minority ethnic groups, which reflect the global ideas and global trends where indigenous minorities, with the involvement and assistance of the NGO's and the UN-wide programs seek to promote inclusiveness in development in general, and in education in particular.

In spite of the rich data produced by researchers, these historical versions have yet to find their way into school textbooks. This lop-sided version and teaching of history underscores the ideological role of education, which is executed through the control

of the curriculum, and serves to reflect the socio-political context in which it is provided.

3. Conclusion

The prevailing political discourse influenced the nature and implementation of the history curriculum in colonial Botswana. Dominant Batswana collaborated with the colonial government in the governance of both the dominant and the subject groups. In the process, school history essentially constituted imperial history and the history of the dominant Batswana ethnic groups, while that of the minorities were silenced. The post-independence government is only beginning to be challenged, but has not yet provided for the incorporation of minority historical experiences into the Botswana history syllabus.

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A National Skills Development Internship Programme as a Talent Retention Strategy: A South African Case Study

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Abstract

Substantial costs are associated with attrition of key talent in South African companies. Within the current shortage of information and communication technology (ICT) skills in the country, it is imperative that companies that have successfully recruited ICT graduates also retain them, given the high demand for their skills. Graduate employers are faced with the challenge of providing support and promoting appropriate forms of work experience for new graduates. Organisations should therefore invest in graduate internship programmes to attract and retain high calibre graduate interns. The research proposes to determine whether a graduate internship programme enhanced the employability and retention of graduate interns in a South African Information and Communication Technology Company. An exploratory research approach is followed, using surveys to gather data from graduate interns and managers/mentors. Flowing from the data analysis, the study would recommend the key success factors in a successful and effective graduate internship programme.

1. Introduction

The retention of new graduates is a challenge to many South African companies. These challenges are aggravated by three factors – the high emigration rate of skilled graduates, the relative scarcity of specialist employees due to an undersupply of skilled labour and the national drive to address employment equity which is fuelling the war for talent among people from designated groups [1]. This situation is particularly real in the South African Information, Communication and Technology sector. A study on ICT skills in South Africa found that in 2006 alone there were 104 000 vacancies in this sector, translated into 46% of unfilled posts [2]. It is thus imperative that companies retain new ICT graduates if they are suitable, skilled and respond well to on-the-job training given the alarming demand levels in this sector [2]. Organisations should therefore invest in graduate internship programmes to attract and retain high calibre graduate interns.

The graduate internship programme in the case chosen for this research project was inaugurated in 2005 by the researcher (Pop) in a South African Information, Communication and Technology company. The key aim of the programme was to appoint ICT graduates from the designated groups and retain them in the company. It is within this context that the study will investigate the impact of the graduate internship programme on the employability and retention of graduate interns.

2. Employability and retention of graduate interns

Employability is an emerging theme in higher education both nationally and internationally. A South African study on employability and higher education concluded that ‘although employers and recent graduates agree that the undergraduate experience is enormously beneficial in terms both of personal development and workplace effectiveness, they are generally of the view that a degree course does not prepare students for work [3].’ This study further showed that there is a mismatch between graduate aspirations and the reality of the labour market and that new graduates are insufficiently prepared for the world of work. It is therefore understandable that employers are dissatisfied with the skills and attributes of recently qualified graduates and concerns are raised about their lack of generic skills [4].

The lack of soft skills, workplace readiness and experience were the key consideration of the graduate programme in the case study as part of the strategy to retain the graduates. It is obvious that at the start of their careers many graduates will lack the soft skills such as time management, creative thinking and general communication skills, goal and priority setting as well as team work, key capabilities identified by the Australian Chamber of Commerce and Industry [5]. The lack of soft skills is the main reason many graduates are unsuccessful in the recruitment phase. The problem is further exacerbated by the fact that firms are generally not able to use new graduates to fill their skills requirements because most graduates have the qualifications but not the practical skills and

experience. Other factors why new graduates are not employable are that the wrong types of graduates are being produced (the need is for technical graduates), graduates are not suited for specialist positions, suitably skilled staff are often poached by other companies and graduates are not of a high enough quality [6].

Private sector leaders espoused a direct link between higher education and the job market, expecting higher education to directly prepare graduates with skills to make them employable [3]. Higher education institutions were criticized because they do not offer adequate soft skills – problem solving, communication, entrepreneurship, good citizenship, managerial skills, leadership skills – ‘generic skills that you need to learn across any walk of life. Employers equate employability with meeting labour market needs and maintain that generally the supply from higher education does not meet the demand [4]. Industry prefers people who can contribute from day one and the starting point for training has to be not only knowledge of the subject but a capability in the day to day working environment [7].

Researchers however, maintain that the link between labour and higher education may be indirect. Applied within the South African context, research revealed that work experience and occupational specialisation are the preserve and domain of the employers in the labour market, who build on the general foundation laid by higher education institutions to develop the requisite specialised skills, knowledge, and dispositions to produce skilled employees [3]. The research also outlines the deferred employment model pending professional education and training, much like the internship for medical doctors [3]. Within this approach, once a graduate has a degree, professional specialised knowledge is provided through mentored work experience, controlled, regulated, and accredited by professional associations, in their capacity as statutory bodies. The employer focuses on providing the specialised practice and experiential knowledge required [3].

Graduate employers are thus faced with the challenge of providing support and promoting appropriate forms of work experience (authentic rather than contrived) for new graduates. Programmes to assist graduates to thrive in the real-world context of the workplace, providing opportunities to maximize the assets they acquire through the university experience will optimise their successful transition into organisations and hence retain them [4].

3. Research Method

An exploratory research approach is followed in this project. A survey method is used to collect data from purposively selected graduate interns and managers/ mentors in a South African ICT company. Surveys are distributed electronically to the participants.

4. Conclusion

Given the high demand for ICT graduates, it is evident that talent retention, especially among designated sectors, is a major concern for South African companies. The investigation of the impact of an intervention programme (graduate programme) as a retention strategy would not only benefit the research setting in which this study will be conducted, but also companies who employ ICT graduates. This will also provide valuable insights for higher education in terms of curriculum development for the purpose of aligning theory with practice.

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Universities as Organisations or Institutions: the Culture Debate and One Institution

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Abstract

This essay attempts to conceptualise institutional culture by posing a critical question: are universities institutions or organisations? The question arises due to ambiguities in the literature: several authors describe universities as institutions rather than organisations, while others use the notions of 'organisation' and 'institution' interchangeably. In agreement with Hoffman that it would be critically important to consider how and in what ways concepts of culture can enhance – or impede – understanding, research and action in education, I explore the culture debate. There seems to be complex conceptual issues associated with some of the baseline debates on the nature of culture and, following from this, the nature of institutional cultures. The literature suggests that institutional culture as a social construct is embedded in a very definite historical context and purpose, and this historical context becomes very useful in an analysis of what constitutes institutional culture at Stellenbosch University. The discussion on two meanings of institutional culture (perceptions, and the language issue) indicates that culture is dynamic, and highlights how meanings change over time. The essay suggests that there is no easy definition of 'institutional culture', as there is no one single characteristic of an institution that can be cited to define this culture. I conclude that the usefulness of institutional culture is that it connects people and should be used for a purpose; it is not just something to have, which is where the discussion of the concept usually focuses.

1. Introduction

Whenever visiting the campuses of Stellenbosch, Cape Town and the Western Cape universities, the intuitive sense of the uniqueness of, as well as the differences, between these three institutions. Reflect on what make these institutions different from each other: is the buildings (they certainly have different architectural styles)?, the students?, the staff?, programmes, or what is it? It is a far more complex task to explain what makes each institution unique or different, keeping in mind that they are located not far apart geographically. Put differently, it appears at

surface level that there is a (cultural) difference between institutions, but it is a far more complex task to describe such differences. Harold Silver's [28] question: 'Does a university have a culture?' a good starting point for this discussion. He argues that 'organisational culture' (that is, a culture applied to higher education's institutions as such) has no basis in the day-to-day operation of most academic staff in most institutions. The bone contention is that, while academics may not pay much attention to the culture of their institutions in their day-to-day activities, there is an inescapable, pervasive culture that determines how things are done at each institution.

Silver's use of 'organisational culture' with respect to universities is not unproblematic, though, due to the assumption that universities are organisations. I hold that, while it is true that institutions such as universities are pressurised to function increasingly as organisations, and (non-university) organisations tend to adopt a university culture, we should be careful not to conflate the two concepts. There is evidently an encroachment of organisational or corporate culture on the university in the form of managerialism, and hence the difficulty to conceptually distinguish between institutions and organisations. This research work suggest a distinction between these two concepts, and will discuss that later.

This inquiry notes that the concept of institutional culture is under-studied and more research is needed. Two official documents share this view. The Council on Higher Education (CHE) [9] concludes that the extent to which institutions have developed institutional cultures is difficult to gauge, since no data on institutional culture have been gathered in any systematic way at either an institutional or a national level. The Ministry of Education [22] emphasises that an important strategy that institutions have largely ignored is the need to change institutional cultures, and it highlights several points worthy of consideration. First, the Ministry suggests that there is a need for refocusing institutional cultures nationally. It is agreeable, as this is important for consolidating democracy and to ensure a unified national system of higher education, geared towards meeting the challenges of a democratic society. Second, institutions have largely ignored the need to change their institutional cultures. This may impact on the capacity of

institutions to transform their cultures. Third, institutional cultures can be alienating or accommodating. Certainly this can be related to how institutions deal with diversity. The question is therefore how the institutional culture deals with such challenges. Since these pronouncements were made, institutional culture has received more attention, and has become a topic for masters and doctoral research. To this end Higgins (2007) observes that institutional culture has become a buzzword in recent discussions of higher education in South Africa, and there is a growing sense that institutional culture may well be the key to the successful transformation of higher education in South Africa. Similarly, Jansen [17] observed: the last frontier in the quest for social integration and non-racial communities in former white institutions will always be this hard-to define phenomenon called "institutional culture". This interpretation of institutional culture may account for the apparent lack of research data on the concept.

Mergers of institutions also added to the complexity in describing the concept of institutional culture. This is briefly referred to by the CHE [9], which identifies incompatible institutional cultures as possible consequences of institutional restructuring. Therefore, the institutional cultures resulting from mergers are hard to describe, as such institutions grapple with a multiple of factors in their re-organisation, and this is a complicating factor in the study of institutional culture. In an attempt to further understand institutional culture in higher education institutions (universities), this work provides a conceptual exploration of the concept. This conceptualising assumes that a university (as an institution) does have a culture.

2. Conceptualising Institutional Culture

In an attempt to explore possible meanings of institutional culture I draw on the resources of philosophy. Here I agree with Wittgenstein [2] who states: through a searching analysis of the key concepts and terms that permeate the language of higher education, philosophy can help to clarify our thinking about the beliefs, presuppositions, and values on which higher education as a social practice is founded. An analysis of key concepts associated with the notion of an institutional culture may therefore assist with this inquiry; it follows that an exploration of institutional culture may be assisted by exploring the nature of institutions, the concept of culture, and discourses pertaining to institutional culture. I start this conceptualisation by posing a critical question.

3. Are universities institutions or organisations?

Before continue with the discussion of the concept of culture, it is important to briefly touch the concept of institution, and want to consider the above critical question which points to ambiguities in the literature. Several authors describe universities as institutions rather than organisations ([18], [24], [27], [7], [35]) and I share this view. But there are also others [30], [32] who use the notions of 'organisation' and 'institution' interchangeably in their discussions of universities (they then refer to 'organisational culture' and 'institutional culture'). This is problematic in nature, as it assumes that organisations and institutions are similar. As far as institutions are concerned sharing the view that an institution is not a place: it is a system, and a system functions - whatever its degree of coherence and integrity - as a de facto community. Thus, the community shapes the institutional character.

Tierney [14] was one of the first scholars to propose the extension of the concept 'organisational culture' to cover the work of and running of universities as organisations. The introduction of 'organisational culture' into higher education can be viewed as an encroachment of organisational or corporate culture on the university in the form of managerialism, and points to the blurring of the organisational and institutional roles of universities. This blurring of roles has impacted on the special role of the university as an institution dedicated to the pursuit of significant knowledge and lasting values.

I can understand the conflation of 'organisation' and 'institution', because universities, by nature of their institutional mandate, have to organise themselves in specific ways, and such organisation has a bearing on the way they conduct their affairs. Over the past few decades we have seen a change of higher education from a social institution to an industry; universities had to find innovative ways to deal with decreased state funding. As a result they had to become more competitive in order to boost student numbers, to attract the best staff and to conduct market-related research. These realities forced universities to pay more attention to the way they organise themselves, and in the process their institutional and organisational character became intertwined. It is not the intention to analyse concepts of 'organisation' and 'institution' more in-depth, but these concepts are important in an inquiry of institutional culture, and for that matter, the role of culture in the ways universities are organised.

4. The culture debate

My argument in exploring this concept is that a deeper understanding of culture can be very useful in an exploration of institutional culture. To this end Hoffman [16] suggests that it would be critically important to consider how and in what ways concepts of culture can enhance – or impede – understanding, research and action in education. But culture seems to be a very difficult concept to work with, and Välimaa [35] cautions that ‘culture’ is difficult to use as an instrument of research, because it can be defined in far too many ways. He adds that culture may also be problematic as a general framework of analysis, because it has to include as many elements of higher education institutions as possible (ecological characteristics, historical events, and institutional traditions and missions). Bauman [3] explores culture as concept, as structure, and as praxis, and his analysis can be beneficial for this inquiry. Parekh [25] provides further insights into understanding culture when he discusses the following aspects thereof: nature and structure, dynamics, cultural community, loyalty to culture, cultural interaction, cultural diversity, and evaluating cultures. Culture is furthermore described as ubiquitous [36]; this implies that every organisation, every department, every little informal work team has a culture and that people are constantly surrounded by culture, and their behaviour is shaped by it. Culture makes its presence known whenever a new leader appears or there is a change in managerial style. The fact that an institution has a culture implies that institutions are living and changeable entities, as are the people who comprise them. These brief references suggest that ‘culture’ is a very difficult concept to work with, and the concept lend itself to a variety of interpretations. Culture thus takes on many different meanings and directions, and that makes it difficult to explore institutional culture.

Since this essay explores institutional culture in higher education, I want to explore a conceptual link between higher education and culture. Barnett [1] addresses this question when he explains how this culture works on two distinct levels. First, the idea of culture has application in relation to the academic community. Secondly, culture manifests at the level of the process of higher education itself, the level which comes close to that of the student experience. Here the idea of culture suggests a shared set of meanings, beliefs, understandings and ideas – in short, a taken for granted way of life in which there is a reasonably clear difference between those on the inside and those on the outside of the community. There is value in the culture of higher education to society, and for Barnett this lies not in the acquisition of specific competencies, but is in direct proportion to the critical capacities of its students.

When exploring the concept of culture, there are also old and new ideas that can be considered. Old ideas [37] refer to culture as: bounded and a small-scale entity; defined characteristics (checklist); unchanging, in balanced equilibrium or self-producing; underlying system of shared meanings: ‘authentic culture’; identical, homogenous individuals. Some new ideas are: (1) culture is an active process of meaning making and contestation over definition, including of itself; (2) people differently situated in social relations, and processes of domination, use economic and institutional resources available to them to try and make their definition of a situation ‘stick’, to prevent others’ definitions from being heard, and to garner the material outcomes; (3) sites are not bounded – people draw on local, national and global links; (4) the way clusters of concepts form is historically specific, and ideas never form a closed or coherent whole; (5) in its hegemonic form, culture appears coherent, systematic, consensual, like an object, beyond human agency, not ideological – like the old idea of culture. New ideas of culture seem to be more relevant for this inquiry.

Sackman et al. [26] adds to the debate when they suggest that the core of culture is composed of explicit and tacit assumptions or understandings commonly held by a group of people; a particular configuration of assumptions and understandings is distinctive to the group; these assumptions and understandings serve as guides to acceptable and unacceptable perceptions, thoughts, feelings and behaviours; they are learned and passed on to new members of the group through social interaction; and culture is dynamic – it change over time, although the tacit assumptions that are the core of culture are most resistant to change.

In my view, there seems to be complex conceptual issues associated with some of the baseline debates on the nature of culture and, following from this, the nature of institutional cultures. For instance, is culture something that higher education institutions ‘have’, or are institutions themselves artefacts of culture? I contend that the relationships between social practices within institutions and the larger structural currents of society (as highlighted by Tierney) must be considered to some extent in order to clarify assumptions about the extent to which social practices (and institutional cultures) influence the way universities are managed.

5. Institutional culture and higher education

After having considered the nature of universities (institutional and organisational) and having explored the role of culture, I now come to a discussion of institutional culture. The latter is used

widely in describing the personality of institutions. Toma, Dubrow and Hartley [32] build on work on institutional culture of Kuh and Whitt [19] and describe institutional culture as the shared beliefs, values, assumptions, and ideologies that bind a group together. They posit that institutional culture has subjective dimensions (shared assumptions, values, meanings, understandings, and so on) and also more objective aspects (physical artifacts, organisational stories, heroes and heroines, rituals and ceremonies), the former being less apparent than the symbols, language, narratives, and practices needed for conveying them.

Supporting my view that culture is a difficult concept to work with, Kuh and Whitt [19] suggest that a study of institutional culture is, however, not unproblematic because the concept culture as a general framework of analysis has to include as many elements of higher education institutions as possible (ecological characteristics, historical events and institutional traditions and missions). This point is emphasised by Lee [20] who concludes that a study of institutional culture must acknowledge the heterogeneity of values, beliefs, and priorities across, for instance, the independent academic departments. Thus, one cannot assume that people attached to an institution have a uniformed understanding or meaning of institutional culture. For me, a study of the theme has to acknowledge that institutional culture as a social construct is embedded in a very definite historical context and purpose [21], and is usually taken for granted and continues to be played out in an 'invisible manner' [29].

When speaking about institutional culture, one can also consider academic or university culture as a key aspect. According to Mora [23], university culture can be regarded as the beliefs of the members of the university community developed over centuries and transmitted both through language and symbols. He states that university culture is decisive in determining the behaviour of members of the university community and in the governance and decision-making processes of the institutions themselves. He further suggests that it is often unspoken common assumptions that best explain the behaviour of members of the academic world. Since academic culture is evident in the way that academic departments are organised, my observation is that departments organise themselves very differently as a result of those who shape the ideas and practice within a distinct community. Thus, an institution consists of many and a variety of institutional cultures. But let me also add that there is very often a dominant view or group that articulates the common and/or shared meanings.

To make sense of "unspoken common assumptions" can be a very difficult exercise. This difficulty is eloquently articulated by Fay [12].

The interpretation of the meanings of actions, practices and cultural objects is an extremely difficult and complicated enterprise. The basic reason for this is that the meaning of something depends upon the role it has in the system of which it is a part, and this system may be exceedingly complex and rich. In order to know the meaning of certain overt movements interpreters must understand the beliefs, desires, and intentions of the particular people involved. But in order to understand these, they must know the vocabulary in terms of which they are expressed, and this in turn requires that they know the social rules and conventions which specify what a certain movement or object counts as. Moreover, in order to grasp these particular rules, they also have to know the set of institutional practices of which they are a part, and how these relate to other practices of the society.

Drawing on the nature of universities, I suggest institutional culture should also imply that institutions establish a stable structure for human interaction, and construct forms of consciousness. Since culture is composed of explicit and tacit assumptions or understandings commonly held by a group of people, and its core is resistant to change, such resistance could explain why universities, in their efforts to transform, have largely ignored transforming institutional cultures. A complicating factor could be that cultures in universities are multiple, and is generated at the level of the workgroup within departments; and in order to address the issue of culture it may be necessary to go down to this level [31]. There are also many aspects pertaining to universities (environment, mission, socialisation, information, strategy, leadership, management, institutional practices, institutional traditions, language, symbols, institutional priorities, national and local policies and procedures) which may influence institutional culture, and in the next section I shall refer to some of these.

6. Stellenbosch University: A Case-Study of Institutional Culture

Since the Higher Education Quality Committee's (HEQC) [15] recommended that "Stellenbosch University develops a comprehensive strategy to transform its institutional culture" there has been a renewed debate on campus and the following are discussed: disillusionment and estrangement, embracing of new ideas, how to deal with difference, perceptions of the university, race and ethnicity, religious beliefs, sexual orientation, the role of language, and the idea of a secular culture. An underlying idea in the debate is how to create a home for all at the university. The debate is very useful in that it provides an opportunity for a critical engagement on the culture of the institution. However, I find that these debates do not pay

attention to the question whether universities are institutions and/or organisations; consideration of this question could add a critical dimension to the debate.

At a policy level, the university makes various pronouncements on institutional culture in its documents, and I find the Concept 2 Diversity Framework [34] as perhaps the most useful in its articulation of the theme. The document identifies and discusses the following meanings of institutional culture within the context of diversity:

values and codes of conduct, perceptions, physical symbols, language, ceremonies, university structures and -bodies, corporative facilities, and sport.

These meanings, as articulated by the university, provide a very neat description as to what the university regards as constitutive of its institutional culture. Although I would have liked to analyse all of these, for purposes of this inquiry I shall touch briefly on only two meanings which seem to be quite prominent in the news and debates, namely the 'language issue' and 'perceptions'.

7. The language issue

Undoubtedly, language is a very important and controversial current issue of Stellenbosch University (SU), and there are many opinions on it. The university acknowledges that for most of its existence the ethnic exclusivity of the institution was guaranteed and reinforced by the fact that it adopted Afrikaans as a medium of instruction. With the repositioning of the institution a Language Policy was designed in 2002, and Afrikaans is identified as the default institutional language of choice for academic and communication purposes. While the policy acknowledges the special status of Afrikaans which must be promoted, it accords such privileged status in terms of a multilingual context. This position, understandably, has been received both positively and negatively by different internal and external constituencies. The positive dimension of the language policy is often raised, although not exclusively, by those whose mother tongue is Afrikaans and those who are reasonably bilingual in Afrikaans and English. The negativity with regards to Afrikaans, while it does criticise the language in terms of it being a tool for communication, is perhaps because of the fact that Afrikaans is being elevated to an institutional 'core value', alongside equity, diversity and scholarship.

The importance of language is shown by research findings of the Department of Journalism (2005) on 'Stellenbosch University as a topic of readers' letters in the newspaper Die Burger (2002-2005). During the period 13 May to 28 October 2002, 14% (137 out of 957) of all the letters published had SU as subject. Altogether 83% (114 out of 137) of the SU letters focused on the theme Language Policy.

In interviews conducted with relevant editorial staff from Die Burger (Department of Journalism) [11] the following views are expressed:

Like all other higher education institutions, SU is going through a process of transformation. Against this background, transformation at SU is something that we will always approach as a news item: how it is approached, the critique around it, where the university is heading, the future of the university. Connected to that is the emotive component of Afrikaans. One of the products of the transformation process is that Afrikaans as a language at the university is endangered. People talk about it. The public's involvement at SU and the Afrikaans language – a combination of these two factors makes it newsworthy. It is not happening on the same scale at other universities.

We see SU as a breeding ground for Afrikaans, and it will always be, and it must always be so. But that does not mean that – within the greater institution that gives a platform for Afrikaans academics to publish and lecture in Afrikaans, etc. – it should be a narrow-minded institution that has to function within the greater South Africa and international academic circles. ...We naturally see SU as an Afrikaans institution and we will focus on that. To us it is important that it should remain that, even if it becomes the only one in the country that has that status at a tertiary level.

The University positions itself as a language-friendly university, with a responsive and flexible approach to language of instruction, and with Afrikaans as its point of departure (University of Stellenbosch) [33]. In its Concept Two Diversity Framework [34] the University acknowledges that its language policy necessarily impacts on the development of diversity. There have been many debates at the university about the impact of its language policy, which have been articulated by students as 'the advancement of Afrikaans as the basic teaching and institutional language of the SU, within a multilingual context'. A result of this is that the university has failed to attract large numbers of black students (who prefer English as medium of instruction). I have been part of numerous discussions around the medium of instruction, and listened to many views in support of Afrikaans. But I do get the impression that it is not as simple as that – it is not just about language, it is also about the ideology in which discussions on language is embedded.

The ideology, and history, of the language debate is articulated by Prof Chris Brink (2005a), former Rector of Stellenbosch University, as follows:

Stellenbosch was one of the main intellectual sources of apartheid ... the association of the University with the power structures of Afrikanerdom was, for a long time, a close one. DF Malan, the first apartheid Prime Minister, was a

Stellenbosch man. Hendrik Verwoerd was a Professor of Sociology and Social Work here before turning to politics. John Vorster was a prominent student leader who later, as Prime Minister, became Chancellor of the University. The last apartheid President, PW Botha, likewise became Chancellor at the time of his political power (even though he had no previous connection with the University). Rectors of the University were typically prominent members of the Afrikaner Broederbond.

My observation is that language at Stellenbosch University accounts for a major part of its institutional culture, and this impact negatively on its student and staff profile. For instance, contrary to national trends where South African university profiles are becoming increasingly more diverse, with a concomitant drop in white students, Stellenbosch's white student profile has remained unusually high and steady (2005: 71.55%; 2006: 71.59%; 2007: 70.51%; 2008: 68.6%). To emphasise the importance of language, there were again renewed debates on the issue in May 2009, and the University Council (2009) responded by stating that "in 2010, parallel-medium instruction will be presented in the first year of study in four faculties - Science, Engineering, Agrisciences and Economic and Management Science. Management will facilitate further consultation and discussion within the framework of the Language Policy and Plan, specifically on the teaching language model for the senior years of study as of 2011".

To conclude this section, I have also heard white colleagues openly arguing for substantial change in the language policy, and calling for a change to English as the medium of instruction. It is not such a far-fetched idea, as many of our students who graduate as teachers in the Faculty of Education (where over 90% of students at undergraduate level are white) prefer to teach in the United Kingdom, where they teach in English. The option of parallel-medium instruction also presents considerable challenges. One also has to consider whether there are enough Afrikaans-speaking students to ensure the sustainability of the university. What cannot be denied, though, is that language carries institutional meanings, and an Afrikaans medium of instruction excludes the (African) majority of South Africans from gaining access to the institution.

8. Perceptions

Despite efforts of the University to change perceptions, there is still a perception that Stellenbosch University is largely white, male, Afrikaans, and Christian dominated, and conservative. These perceptions are reinforced by the language of policy documents of the institution. Despite a national focus on transformation, my scrutiny of the Strategic Framework of the university

(2000) has revealed a total absence of the concept of 'transformation'. Concepts such as 'positioning', 'changing', 'reposition', 'redesign', 'self-renewal', 'self-scrutiny', 'reassessment' are prevalent in the text, but 'transformation' does not appear even once. What does this mean? Two seminal government policy documents (Education White Paper 3 and the National Plan for Higher Education) revolve largely around the concept 'transformation' and meanings which underscore its manifestation in higher education. Given the historical and political background of Stellenbosch University, there seems to be a subtle reluctance to use the concept. My inference is that it seems as if the notion of transformation as articulated in some government policy documents might not necessarily be commensurate with the institution's 'positioning' in terms of the changes which currently transpire in higher education – hence the perception that the University is lagging behind on transformation.

Let me illustrate my point. On the 27th July 2005 Prof Brink (2005b) delivered a speech entitled "Annual Public Report by the Rector" On transformation and Quality at Stellenbosch University. I find the title of his speech very striking. Transformation is spelt with a small 't' and quality with a capital 'Q'. I can only assume that this is a very deliberate formulation. If my assumption is correct, then the message is conveyed that transformation at Stellenbosch is not so high on the agenda, but quality certainly is. Such incidents confirm, rather than negate, perceptions about the institution.

Brink further enforces perceptions of the institution when he states that amongst many of the institution's traditional constituency, as manifested by Group 2 in the University's CREST (Centre for Research and Science and Technology) Report, there is a recurrent fear that transformation will erode quality. He states that many Afrikaner alumni are of the view that Stellenbosch was always an outstanding university, but that it is now sadly in decline, or at least in imminent danger of decline, because of transformation [5]. Prof Brink makes two striking observations. The first is that during the long time of Afrikaner political dominance, Stellenbosch had no need to measure its own quality other than by its own yardstick. Inevitably, this led to an unsubstantiated self-image of overall excellence. Secondly, in terms of all the usual measurable parameters, academic quality at Stellenbosch has slowly but surely been increasing at the same time as the University started opening up to the outside world.

I will now attempt to explore the self-image which Prof Brink talks about. The Minister of Education (Professor Sibusiso Bengu) issued a communiqué in 1995 to all South-African higher education institutions to encourage them to establish

Transformation Forums (TFs); at the same time he expressed an unwillingness to interfere in institutional management and to resolve disputes between TFs and other structures of governance, or to accede to the demands of student organisations. While two neighbouring universities (University of Cape Town and the University of the Western Cape) heeded the call to establish TFs, Stellenbosch completely ignored it. Later, however, the Higher Education Act 101 of 1997 legislated for the establishment of four higher education governance structures: council, senate, SRC and Institutional Forum (IF). Stellenbosch was then forced to establish an IF without having had the experience of a TF; and managed to establish the IF in September of 1999, thereby meeting the deadline. It is interesting to note also that only Stellenbosch has decided upon a perfect balance across all four categories of representation (government and management, staff, students, other community-based representatives). Harper provides a possible explanation when he concludes that many institutions have tended to give preference to the letter of the Act, while ignoring the transformational purpose of the IF in earlier policy documents [13].

Perceptions about the university is further articulated by CREST [6], which also conducted an investigation into the "SU Trademark". They tested current students on the pace of change at SU, and these are the key findings:

- White Afrikaans-speaking students are largely divided over transformation at SU. Similar proportions believe that transformation is being handled responsibly or somewhat irresponsibly.
- White non-Afrikaans-speaking students also fall into two groups – one group who feels that transformation is being conducted in a responsible manner (47%), and a second group who feels that the rate of transformation is unsatisfactory (42%). Interestingly, this profile is very similar for black, coloured and Indian Afrikaans speaking students.
- The largest percentage of black/coloured/Indian non-Afrikaans-speaking students (60%) do not believe that SU is being adequately transformed. There is also, however, a large percentage (36%) of this sub-group who believe that SU is not only being transformed, but that this is also being done in a responsible manner.

This discussion on perceptions shows that, despite exemplary institutional plans, Stellenbosch has failed to change negative perceptions about the institution. It also highlights that there remains a huge challenge for the institution to free itself from the historical and ideological burdens of the past. These perceptions can also not be ignored, as it impacts on the ability of the institution to function effectively in a democratic society. It is encouraging to note that the current Rector, Prof Russel Botman,

talks more readily about transformation, and boldly addresses the perception of people from previously disadvantaged communities who indicate that race and ethnicity should be important considerations in discussions on institutional culture. The Overarching Strategic Plan (OSP) of 2009, which seeks to promote democracy and to maintain and promote human dignity, has the potential to change perceptions of the university.

9. Concluding Remarks

This inquiry assumes that a university (as an institution) has a culture, and I have argued that a deeper understanding of the concept of culture is very useful in an exploration of institutional culture. I pointed out that there are complex issues associated with debates on culture, and following from this, the nature of institutional culture. My exploration indicates that there is, however, no easy definition of "institutional culture," as there is no one single characteristic of an institution that can be cited to define this culture. It also acknowledges that an institutional culture does not develop overnight (WASC 2001). This study supports the view that a strong institutional culture has concrete uses in universities and colleges, and culture is not simply something that is but is something that can do. The usefulness of institutional culture is that it connects people, and is not just something to have, which is where the discussion of the concept usually focuses, but is something to use. Human interaction should thus be an important feature of an institutional culture, and attention should be paid as to how the institutional culture facilitates diverse groups to interact with each other. An exploration of institutional culture in higher education also assists us to organise ourselves, as institutional culture does the following [32]: conveys a sense of identity (who we are), facilitates commitment (what we stand for), enhances stability (how we do things around here), guides sense-making (how we understand events), and defines authority (who is influential).

Currently, many universities in South Africa are attempting to construct a new and shared institutional culture; this might require that institutional culture be deconstructed in order to reconstruct a new culture, and one has to be mindful that an institution consists of many and a variety of institutional cultures. The reconstruction of (new) culture(s) is proving to be a major challenge.

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Practicing Inclusion in a Hong Kong Special School

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Abstract

The inclusion movement was used as the reason for converting all seven special schools for students with severe learning disabilities, Skills Opportunity Schools (SOSs), into general secondary schools. Parental criticism and demand eventually resulted in keeping three of them as so-called mainstreamed-SOSs that are to accommodate students with learning disabilities and others. Part of this ethnographic study is used to illustrate how inclusion is actually practiced in one of the schools. Factors significant to such practices consist of a team of experienced staff for students with disabilities and a pervasive culture of acceptance, accommodation, continual trial and error for more effective learning among the staff.

1. Introduction

In 1997, the Hong Kong government formally implemented integrated education for a pilot period of 2 years through the participation of seven elementary and two secondary schools. Despite fierce criticisms on issues related to its implementation from relevant stakeholders, integrated education was nonetheless expanded to over 800 (around 500 elementary and 300 schools) out of 1,060 public schools in the school year of 2008-09. Anyhow, the government has repeatedly asserted that special schools continue to serve important roles in educating students with intellectual disabilities, sensory impairments, physical disabilities, and emotional/behavioral disabilities. The only type of special schools considered unnecessary under the direction of integration are those serving students with severe learning disabilities, known as skills opportunity schools (SOSs), and they have been converted to general secondary schools. Parental criticisms and demands resulted in three of them maintaining the mission of targeting students with disabilities. These schools, now referred to as mainstreamed-SOSs by the government, receive the same resources as other general secondary schools. All their extra funds and resources no longer apply.

Despite extra resources and personnel training, there was never a shortage of criticisms on the lack

of effective accommodation in integrated settings. Various studies (e.g., Hong Kong Primary Education Research Association and Special Education Society of Hong Kong [1]; Mittler and Poon-McBrayer [2]; Poon-McBrayer [3]; Wong [4]) investigated and reported the issues in the last decade. To this date, no study has investigated how the mainstreamed-SOSs are accommodating students with learning disabilities while functioning as general secondary schools. Data of this article are part of a larger ethnographic study and this article focuses on how and how well these schools fulfill their dual mission and factors contributing to the fulfillment. To achieve the purposes, the background information regarding the establishment of the SOSs will be provided, followed by the details of research methodology, themed results, discussions and conclusions.

2. Skills Opportunity Schools

In 1990, the Education Commission recommended the establishment of eight SOSs for children with severe learning difficulties who cannot benefit from the standard curriculum even with the help of intensive remedial services. These schools were to accommodate the 12 to 14 age group, offering equal opportunities for appropriate schooling. Each SOS was to provide 300 places through the operation of 15 classes of Grades 7 to 9 (i.e. 15 classes x 20 students).

The curriculum of SOSs comprised 60% academic subjects and 40% cultural, practical and technical subjects (Education Commission, 1996), such as social skills and skills-related subjects such as clerical skills, home economics, woodwork and metalwork.

3. Methodology

Focus group interviews of the principal and teachers, informal interviews with students, participant observations of interactions among students and among teachers and students were the main data sources. To keep the groups homogeneous, one focus group session was conducted for the three principals and teachers of

each participating school respectively, totaling four sessions.

The principal interviews centered on administrative effort and teacher interviews on effort in curriculum, instructional and assessment aspects. Informal dialogues with students in the playgrounds intended to understand student sentiment of their learning and growth as well as their comparison of experiences in this type of school and others if they have been in other secondary schools. Informal dialogues with students and participant observations would be conducted simultaneously in school playgrounds during lunch hours or right after school.

3.1 Data Analysis

To ensure data credibility, two levels of member checks were carried out. I first summarized the data at the end of each interview to ensure sufficient understanding of the information. I then presented identified themes to verify with the participants after coding had been completed. For data dependability, transcription margin memos, which included observation summaries, were written. Remarks and suggestions made by a bilingual transcription auditor who will check the accuracy of translation and transcription of focus group and informal interview data were retained. Cross-case analysis will be adopted to capture the patterns of perceptions of experiences of principals, teachers, and students across schools. Data will be clustered and organized into themes that represented similarity in relevant issues.

4. Initial Findings

Initial findings of one of the three participating schools, School A, are selected for this case study as the final part of the study has not yet completed. An informal individual interview with the principal of School A was conducted the day after the principal focus group interview. Data relevant to this school's attempt to and how well it succeeds to achieve the dual mission of accommodating diverse needs are extracted and grouped under diversified student profiles, administrative facilitation, and adaptations in curricula, instruction, and assessment.

Established in 1998 as an SOS, School A was converted to a mainstreamed-SOS in September 2003. In spite of the reduced resources, the founding principal has determined to continue the school's mission of serving students with severe learning disabilities. He seeks donations to maintain the same number of social workers as an SOS, launch needed extra-curricular activities for vocational learning, provide diversified curricular and assessment materials to accommodate individual needs, and so on. Interviews have confirmed a trusting working

relationship among the school board, the principal, and teachers. Positive rapport between staff and students was obvious during participant observations.

The school now has to open places for all who apply. All common categories of special needs are now found in these schools: varying degrees of intellectual disabilities, learning disabilities, autism, attention deficit hyperactivity disorder, speech impairments, hearing/visual impairments, physical disabilities, and former psychiatric patients. Students with learning disabilities only constituted 30% of the student population for the school year of 2008/09.

Teachers design alternative curricula, constantly diversify instructional and assessment arrangements to meet individual needs. The Hong Kong Examination and Assessment Authority even models after them on providing accommodations during public examinations. To maintain the service and curricular diversity, teachers simply have to take on a heavier workload and become more versatile. Teacher morale is maintained at a reasonably high level as they consider their work important in making a difference in the children's life.

5. Conclusions

The initial findings of this semi-special school provide data on how students of various disabilities are accommodated as desired for and insight into factors contributing to successful inclusive education. Staff commitment, acceptance, creativity, and belief of "all children can learn" with supportive leadership that shared the same belief are fundamental to its success.

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Creative Labs: Exploring Creative Knowledge Transfer

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Abstract

Creative Labs is a research project which aims to explore and reveal creative knowledge transfer between artists, heritage professionals, educators, researchers and young people through a collaborative inquiry process. We attempt to work towards a deeper understanding and articulation of the processes of knowledge transfer in the context of a creative education project. There are increasing opportunities for the cultural sector to embrace education and learning as a key element of their work. Participatory activity is one method that can be used to very good effect as it allows for participants to take an active role in learning about, participating in and having agency in culture. By identifying the elements of effective knowledge transfer and transformation within an educational learning environment, we aim to equip arts and heritage practitioners and educators with the skills, knowledge and understanding that will ensure excellence in future projects.

1. Introduction

Participatory activity is most often based on partnerships and collaborations between professionals and teachers and learners. Partnerships across the cultural sector between artists and heritage professionals are increasing as museums and archives see the benefits of interpretation through the medium of the arts. Heritage professionals are custodians of historical buildings, places and collections of art and artefacts, the contemporary significance of which is still to be fully explored. Heritage also describes ideas and ways of life that can help us to place ourselves within a broad social, economic, political and cultural context. This is what makes collaborative work between artists and heritage professionals potentially so exciting. The least it can do is tell old stories in new ways. At its best it has the power to tell us something new about ourselves and the world in which we live. However, the reality can be very different. Without a true collaboration between heritage professionals and artists it is likely that what results is simply another arts education project or a new piece of work made

in a different venue with no real integration or exploration of the historical context or spirit of place.

2. Rationale

So what makes a true collaboration? Collaborations work between people and it is important that relationships between individuals have an opportunity to develop. Each should have a shared, or at least a complimentary, purpose for working together. Space should be found for each partner to contribute their expertise equally. There is also a need for artists and heritage professionals to develop their confidence and skills in this area to respond to what is likely to be an increased demand from schools who wish to deliver to the five hours of culture agenda. We can describe the environment, attitudes and skills that appear to contribute to effective collaborations but we do not yet know the catalysts that make an arts and heritage collaboration greater than the sum of its parts. What is it that lights the spark of creativity? It is our aim through this project to increase the understanding of the collaborative process and help to explore a number of areas. Firstly, how is creative knowledge transferred in this context? We anticipate that it is not a simple, linear transaction, but discovered, negotiated, reviewed and refined in an iterative process. We want to capture this as well as explore how such *can* be systemically captured. How is creative thought translated into product or outcomes? What are the catalysts that spark creativity? What elements make a project successful? What particular skill sets should each partner/participant bring to a project? Secondly, how might this contribute to professional development? How can we build on good practice models and explore areas of excellence in participatory arts/heritage? What is creativity in heritage practice and how can it be applied with different audiences? Are there ways that, once learned, the catalytic elements can be replicated in different settings with different people and still produce a “successful” outcome?

3. Methodology

In order to carry out our approach to investigating creative knowledge transfer, we identified a project delivery team who have developed a participatory creative heritage project. We worked as part of that team during the devising, planning, delivery and review of the project. We are currently using a collaborative inquiry process [1], [2] to researching, observing and witnessing the project with the partners and participants. We feel that the relationship between researcher, evaluator and the project group commonly established in the work we are normally commissioned to do is too distant from the subject of research to allow us to observe and capture the moment of knowledge transfer. Our thinking is that we need to take an approach more akin to an artist's position of embracing subjectivity and integrating it into practice. For that reason artist Yan Preston is a key part of the research group. Yan's contribution will help Sue and Louise to explore this approach and integrate it into their research and evaluation practices. The research we have facilitated has four key areas of focus which represent a number of different viewpoints and perspectives. Firstly, self-review: this is where/when the whole project group, facilitated by the research group, reflects on creative knowledge transfer. Secondly, the way that what we are doing/researching relates to academic theory. Thirdly, how our activities link to and inform formative and summative evaluation practice. Fourthly, and very importantly, the artist's interpretation of the programme, both in terms of process and meaning.

4. Results

At this point we are part way through the project and findings are beginning to emerge as to the nature of creative knowledge transfer, the nature of partnership work and what it practically means to try and engage a group of practitioners from different sectors and young people in a collaborative inquiry project.

5. Conclusions

Thus far we have encouraged and supported participants, artists and heritage professionals to take an active role in the research by facilitating and modeling a process of self-evaluation and group reflection, and provided opportunities for subjective and objective analysis. Effectively, partners and participants become resourced to become consultants, researchers and evaluators who can subsequently explore the environments in which they work and how knowledge is transferred. We are

about to embark on the second phase of the project which foregrounds the artist's own expression of the findings/learning in the form of an exhibition alongside more traditional academic outputs.

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Session 4B: Curriculum, Research and Development

Changing ways teachers teach in an unpredictable climate: Engaging and motivating students in a creative and innovative way (Josie Harvey, Linda Eastwood)

Curricular Framework of Early Childhood Centres in Botswana: Teachers' Perspectives (Kabita Bose)

The Socio-Economic and Socio-Cultural Effects Contributing to Academic Excellence of Children in SAIL Townships Schools in India (P K Aggarwal, Anil Sharma)

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Changing Ways Teachers Teach in an Unpredictable Climate: Engaging and Motivating Students in a Creative and Innovative Way

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Abstract

This paper focuses on one of the findings of a project 'Creativity and Innovation in Teaching in Higher Education' which has been to stimulate, evaluate and promote innovative practice within the University of Huddersfield and among its partners. This part of the research investigates how one of the findings from this project has been used to encourage and support effective innovative practice in teaching and learning between University staff, through the Creativity Cafés, a practical textbook and a DVD. But does creativity enhance theory and practice for students, or is it just the latest trend? Are teachers willing to take risks in an educational world measured by targets and results?

1. Introduction

The authors of this research have been working on a 2-year TQEF (Teaching Quality Enhancement Fund) project funded by HEFCE (Higher Education Funding Council for England) which was completed in July 2009. The aim of the project 'Creativity and Innovation in Teaching in Higher Education' has been to stimulate, evaluate and promote innovative practice within the University of Huddersfield and among its partners.

This part of the research focuses on how one of the findings from this project, the four categories of Creativity identified, have been used to encourage and support effective innovative practice in teaching and learning between different disciplines.

2. Background

At the start of the project, initial interviews with over 40 key University academic staff took place to identify examples of innovative and creative pedagogy across the University. They were

questioned about their understanding of creativity, its importance, and how they had applied it to their teaching.

One question generated a very interesting debate. What is creativity and innovative practice in teaching? All agreed that the purpose of their creative approaches was to engage the students and encourage learning. The responses from staff fell into four broad categories: Creative thinking; Creative Teaching Techniques; Creativity and Community and Employer Engagement; and Creativity in Information Technology. These themes formed the basis for other project outcomes, including the Creativity Cafés, the book and DVD.

Staff were keen to be involved in sharing their creative teaching with others across the University. Many lacked knowledge of innovative practice happening elsewhere, quite often in their own departments too! It became clear how beneficial it would be to get them together, to have a core of people who could establish 'communities of practice' [1] around their creative ideas. The concept of the Creativity Café emerged from this finding.

3. The Creativity Café and its benefit to staff and students

The Creativity Café is based on the 'Learning Café' [2] where 'the café theme is used to get learners networking and sharing ideas in an informal, but structured way'. Tables are arranged in 'bistro' style, with tablecloths, candles, flowers and a menu showing the agenda. The facilitators at each table dress as 'waiters' and help 'spill' ideas from the group onto the tablecloth and feedback the discussions. Eight Creativity Cafés have been organised, each one based around the four categories of creativity.

Further research, using five case studies, investigated whether networking at the Cafés did develop creative ideas which impacted on the classroom. Three mentioned how they now had a 'variety of more engaging activities'. Sessions

were more interesting to teach and the mood of the sessions were often much lighter. 'Teacher-talk' was less, and the use of PowerPoint was kept to a minimum. It was mentioned how they would now 'experiment with new ideas' and would be 'more flexible' in their sessions.

All the interviewees saw benefits in their students' learning and engagement through using more creative teaching techniques. Students were in a better frame of mind and found the lessons more enjoyable. It gave the opportunity for less able students to flourish, as they were given the chance to demonstrate their creative skills. Students preferred 'more practical activities and less teacher-talk', and liked 'being exposed to a diversity of learning approaches' and learnt better with a 'practical dimension to the theory'. Over time students 'became less resistant to change' and 'open to new ideas'. They 'developed their problem-solving skills', became 'more self-sufficient, and the 'quality of work' was much higher.

4. Developments out of the Creativity Cafés

Based on the evaluations and feedback from the Cafés, a DVD was compiled to film and capture short extracts of creative teaching by University staff, including interviews of students. Staff involved with the project have also compiled a book 'A Toolkit for Creative Teaching in Post-Compulsory Education' [2] offering practitioners innovative teaching ideas to use with their students. Both have received appreciative feedback as a useful resource to enhance creativity in lessons. Staff have gained confidence in trying out new ideas and making changes in their teaching style.

5. Should there be Creativity in the Classroom?

Does creativity enhance theory and practice, or is it just the latest trend? Do students learn any better this way? Furthermore, developing creativity in the classroom often means taking risks. This reflects Grainger, Barnes and Scoffham's [3] comment 'If teachers and lecturers are to adopt innovative ways forward, they need to recognise the tension between the incessant drive for measurable standards on the one hand and the development of creative teaching on the other'. Although the participants were enthusiastic and motivated about being creative, in an education

system that is increasingly measured by targets and results, how many staff would prefer to follow safer options rather than risk failure? Eastwood and Ormondroyd [4] question whether 'teachers really (are) encouraged to take risks in their teaching in an ever accountable and unpredictable educational world?' Are the risks too high in making learning more fun and engaging?

6. Conclusion

This paper has focused on how the project has encouraged and supported creative and innovative teaching in the University. From the initial interviews with staff, a need for sharing and networking ideas was identified around the four broad categories of creativity previously identified.

Feedback from staff indicated that they have gained confidence in experimenting with creative ideas in their teaching, and have found students more engaged and motivated too. Important emerging questions developed as part of the research including: do students learn any better this way; and in a target-driven educational world are teachers encouraged to take risks with their teaching? Are the stakes too high?

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Curricular Framework of Early Childhood Centres in Botswana: Teachers' Perspectives

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Abstract

A study on the status of Early Childhood Care and Education (ECC and E) in Botswana established an absence of a prescribed curriculum and a very low rate of formal training of the Early Childhood Education (ECE) teachers [3]. Thus, it was necessary to find out the classroom practices under the present circumstance, and this part of the study mapped the views of the teachers working in ECE centres, as demonstrated by their practices and involvement in the classrooms. The study comprised of 39 teachers from 39 ECC and E centres. Their views were obtained from a semi-structured questionnaire. A quantitative approach was used for analysis of the data. The study found that only 54% of teachers promoted holistic development that catered to physical, cognitive, emotional as well as social aspects at tandem; and remaining promoted a combination of some of the developmental aspects, neglecting some crucial ones completely at times. The findings also indicated that greater emphasis was laid on the development of physical aspect as compared to the other ones.

1. Introduction

ECD deals with young children aged 0-8 years and their overall development that takes care of their educational, health, psychological, philosophical, cultural, historical and sociological perspectives. During this period, children develop very fast and use all their senses. The potential gains for young children are tremendous at this stage and an appropriate stimulation can improve their motor skills, critical thinking, problem solving, enhanced mathematical thinking, increased creativity, a higher level of language development and motivation [12]. In order to provide that, one needs a well planned Early Childhood Education (ECE) curriculum that could cater to physical, cognitive, social and emotional development as well as trained teachers who could deliver the curricular content and help the young ones benefit maximum from all that is available to them.

Studies reveal that government prescribed curriculum is used by pre-schools in developed countries like England, to ensure quality and cultural appropriateness, whereas many start without operational guidelines initially, and procure a national curriculum subsequently. A study found that both Sweden and Norway developed guidelines and annual plan of the institutional activities of preschools to start with and implemented the general guidelines effectively, in order to assist the preschool practitioners. However, they developed a curriculum which outlined goals, content, methods and evaluation and emphasised subject areas (society religion and ethics, physical activity and health, aesthetic subjects, language, literacy and communication as well as nature technology and environment) that were to be experienced by learners each year, along with activities such as play, creativity, joy and humour later on [1].

Botswana, a developing country, on the contrary, has a completely different scenario. A study conducted in 2007 (funded by the office of Research & Development, University of Botswana) on status of ECE in Botswana, found that although the Ministry of Education (MOE) in Botswana was made responsible for coordinating early childhood services and establishing a minimum curriculum framework for day-care and pre-primary services, not much could be established due to various constraints. It revealed that a variety of ECC and E programmes were running in the country, but nearly half of them were run by private sector alone, and the remaining was either run by NGOs or was pre-primary or faith based types. And all these centres were running with no prescribed curriculum to follow. It was also found that almost 50% of the existing ECC and E centres were operating without any ECD trained teachers, who perhaps could not provide proper guidance, care and education to the young children [3]. However, there were some rays of hopes as it revealed that a blue print of the ECC and National E curriculum for pre-primary sector was being developed for piloting and implementing to the pre-schools during the NDP 9 (2003-2009) tenure [16].

Thus, in the absence of a prescribed curriculum that could perhaps guide teachers in their

deliberations and ensure that the activities that are practised in the classrooms are developmentally appropriate for the children that takes care of their individual as well as cultural needs, one often wonders how can we ensure a quality pre-school education that can leave a mark at the most impressionable age? Thus, the author of this paper felt the need to find out what exactly was happening within the classrooms in the total absence of a prescribed ECE curriculum as well as trained teachers, and conducted this study which mapped the views of the teachers of Early Childhood Development (ECD) centres as demonstrated by their practices and involvement in the classrooms.

2. Objectives of the study

Objectives of the study were to assess the views of the teachers of ECE centres, who were teaching in the classrooms to:

1. Determine adoption of any ECE curriculum in the absence of a national prescribed curriculum
2. Assess the activities organised to promote developmental aspects of young children
3. Find out the materials used both indoors as well as outdoors

3. Methodology

A methodology is comprised of a set of methods and principles used to carry out research and it provides a better understanding of how the project was conducted and the data collection techniques that were employed to provide answers to the research objectives. A survey research design was employed for the study. The population of a study is the group of interest to which the result of the study would ideally be generalized [8]. Due to the highest concentration of varied types of ECCE programs (20%) in the whole country and cost effectiveness as well as proximity, Gaborone and its surrounding areas like Tlokweng and Phakalane were selected as population of the research study. A purposive sampling technique was used because of their typical characteristics relative to the phenomenon under study, in this case both region and the available teachers, rather than selecting them at random [18]. Forty (50%) ECC&E programmes out of a total of 82 were selected keeping in mind that a fair representation of various types of ECC&E programmes in the specified area should be maintained. However, the sample comprised of thirty nine (39) teachers as one institutional centre which was operating solely with the help of student teachers, did not participate in the study. Taking cues from Gay and Airasian [8] the most appropriate instrument to use was a questionnaire and not a detailed interview as that was the best option on the

ground at that moment. The questionnaire consisted of both closed and open-ended items and was piloted in a centre which was not in the sample to test its validity and reliability. A quantitative approach was employed to analyse the data and retrieve relevant information. The data collected was cleaned, coded and entered by using SPSS (Statistical Package for Social Sciences) and presented in the form of tables and graphs wherever possible.

4. Results and Discussions

The entire population of teachers comprised of females (Figure 1). It is a fact that child care facilities are still populated by females and perhaps more males need to be attracted into the field of child care to act as role models and father figures for children who come from single parent families and also because children need to know that there are men who are caring and loving [7]. Around 26 (66%) of the teachers of the sample were still in their youth (below 40 years) which is very positive as one could expect them to be energetic and only 3 (8%) teachers were elderly (over 50 years old). Around 16 (41%) teachers had acquired diploma, 18 (46%) had acquired certificate and only 2 (5%) had acquired degree qualifications. And three (7.5%) had no higher qualifications at all and had attained either 2 or 3 years of secondary education (Figure 1).

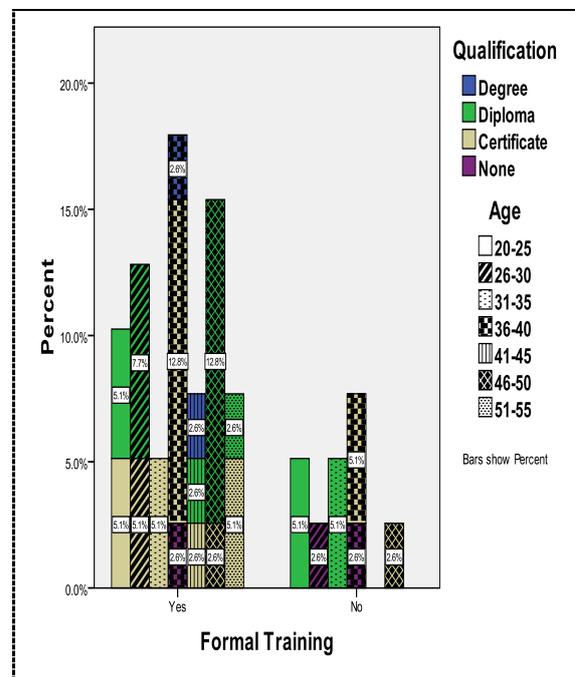


Figure1: Demographic data

However, it was interesting to find out that 30 (76.9%) of the sample were ECE trained from Botswana (10%) and other places like Zimbabwe, Zambia, South Africa, South Korea, Kenya and Sri Lanka. This implies that still a good percentage was

not trained in ECE and this needs to be addressed by providing better training facilities.

4.1. Adoption of ECC and E Curriculum

Introduction of an appropriate curriculum that caters to overall development of young children is necessary for any ECC and E centre to achieve the desired results. The literature revealed that the ministry in Botswana was bestowed with a responsibility of prescribing a standard ECC and E curriculum that would facilitate the overall development of young children [15]. However, that could not be made available, and the results revealed that a large number of the centres (38.5%) did not have any prescribed curriculum and borrowed curriculum guidelines from other countries and used. led to a heavy dependence on borrowed curriculum. The results revealed that a large number of the centres (38.5%) did not have any prescribed curriculum and hence borrowed curriculum guidelines from other countries and used. Around 24 (61.6%) centres used alternatives like adopting a either a South African Curriculum or a combination of curriculum prescribed by other countries (Figure 2) [4], which might not have been culturally appropriate for the children growing up in Botswana!

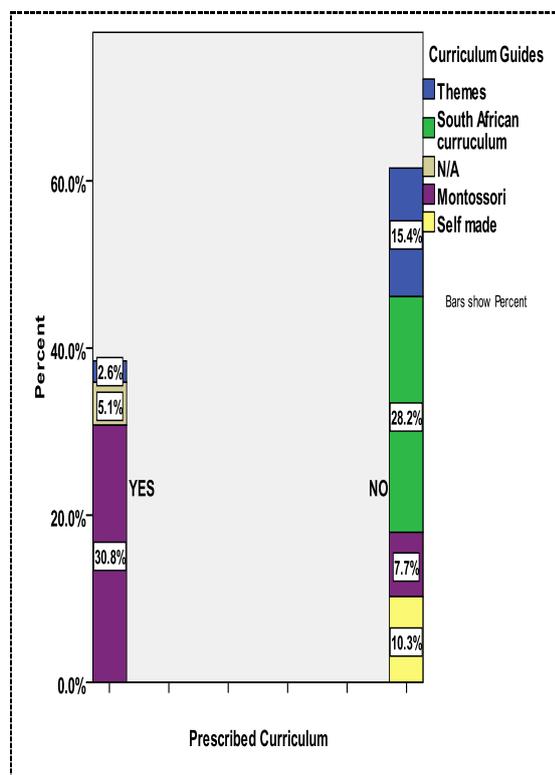


Figure 2: ECC&E Curriculum and Alternatives

The findings also showed that nearly 4 (10.3%) used self-made curriculum based on different themes or Montessori Method (Figure

2). This is risky, as we saw earlier that almost about 50% of the teachers who were working in ECE centres were untrained. Thus how can we depend on the curriculum improvised by such untrained teachers?

4.2. Promotion of Developmental Aspects

On probing further regarding the developmental aspects that were promoted in the ECE classrooms it was found that only about half of the respondents (54%) promoted holistic development that catered to all the aspects namely the physical, cognitive, emotional and social ones at tandem (Figure 3). The remaining, however, promoted only a combination of a few developmental aspects, neglecting some of the crucial ones completely that dealt either with cognitive, or physical, or social, or emotional aspects at times.

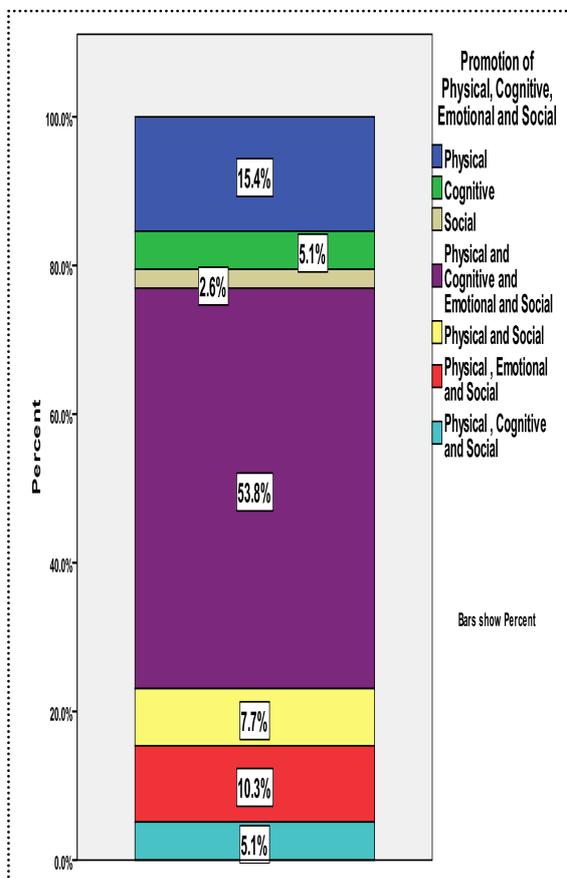


Figure 3: Promotion of Developmental Aspects

It is worth mentioning here that most of the teachers emphasised physical development and organised activities that catered to it with the help of games, building blocks, gymnastics and activities requiring eye-hand coordination. Colouring, art & music, free expressions were also given a lot of importance leading to physical, social and emotional development. Whereas, less than half of them (46%) attempted arithmetic and pre-writing

activities (Figure 4) as well, that directly catered to cognitive development and finer motor coordination.

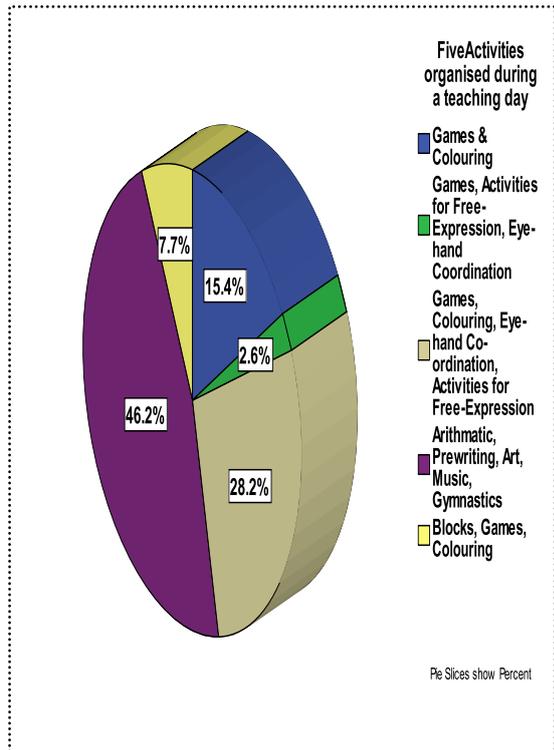


Figure 4: Activities Organised during a teaching day

4.3. Indoors and Outdoors Materials Used

The study also established that efforts were made to provide indoor materials for relevant activities almost every day, using appropriate materials. All the centres provided indoor materials like painting, clay, pictures, scissors, chart books, alphabets charts, building blocks, puzzles, toys, story books, logos, plaster seal, etc. The list of indoor materials too, perhaps, indicates that more emphasis was made on development of motor skills, although social, emotional and cognitive developments were not neglected completely.

Around 70% of them used outdoor materials too every day. The materials used were listed as Balls, Slides, Swings, Hoola Hoops, Seesaws, Climbing Rails and other materials. The emphasis was again more on physical development as compared to the other domains (Figure 5).

However, there was no mention of any Nature Corner, or Pets corner that could have catered to the development of emotional and social aspects. In other words, both indoors as well as outdoors materials used primarily intended to enhance physical aspects!

Nonetheless it could be mentioned here that the teachers selected appropriate materials both indoors as well as outdoor, and used them regularly. This selection of both indoor and outdoor materials could perhaps be attributed to the ECD training of the

teachers and the regular use of such materials could be due their youthfulness. However, their inclination towards development of physical aspects could perhaps be due to the absence of a prescribed curriculum!

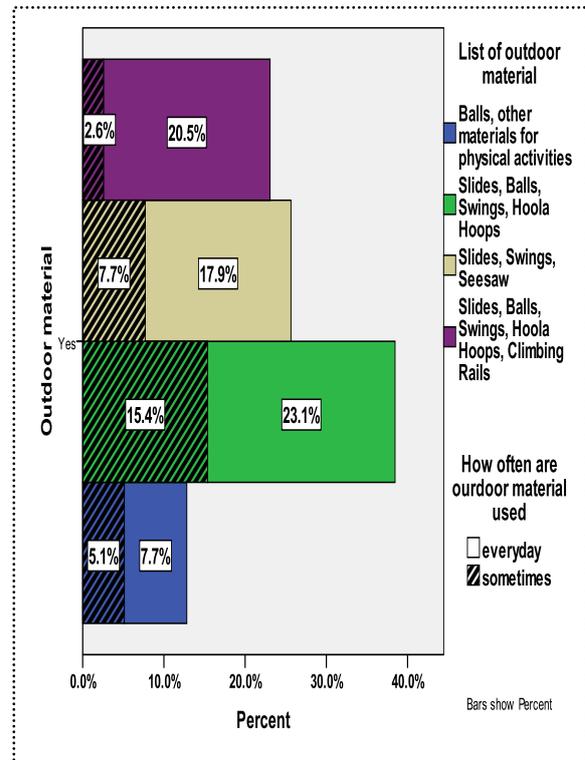


Figure 5: Outdoor Materials Used

4.4. The issue of a Holistic Development

In an ECE curriculum one expects a reflection of growth and learning in a holistic way that has interwoven cognitive, social cultural, physical and emotional dimensions. It expects an adoption of a model of learning that weaves together patterns of linked experiences and meaning. This integrated view of learning sees the child's whole context, the physical development, the emotional stability; the relationships with others, and the child's immediate needs at any moment that would affect and modify how a particular experience could contribute to the child's development. This view of learning sees the child as a person who wants to learn and sees the task as a meaningful whole [19].

The Rumbold Report *Starting with Quality* and the Royal Society of Arts Report *Start Right* both stressed the importance of high-quality early education in early years, recommending a curriculum based on eight main areas of learning: (1) aesthetic and creative, (2) human and social, (3) language and literacy, (4) mathematics, (5) physical, (6) science, (7) spiritual and moral, and (8) technology, which should be made available to all young children between the age of 3- and 4-years as it leads to lasting cognitive and social benefits in children. It also stressed the major prerequisites for

"high-quality" education would be provision of an appropriate early learning curriculum [11].

However, the findings of the current study show that only about 50% of the respondents practiced holistic development. This raises a concern. In addition, it was found that the majority of the respondents catered to the development of physical aspect as compared to the other domains. Physical development is vital during early childhood, as children continue to expand their repertoire of physical skills, adding to those that were mastered during infancy. However, children not only grow physically during early childhood, but grow mentally as well. Children of this age continue to advance their skills in observing and interacting with the world around them. They also make tremendous leaps in how they process, store, and use information [14]. Development of their cognitive abilities take to new levels of richness and reflectivity and the resulting thoughtfulness allows for greater sophistication in the related areas of social relationships and self-directed learning. Thus an early childhood teacher must provide opportunities for development of cognitive abilities to facilitate a bootstrapping of learning by development, and of development by learning [17].

Thus there is a need to provide an ECD curriculum to the teachers in order to guide them as how to provide cognitive development using appropriate curricular activities, and encourage children's involvement in creative play, mastery learning, problem solving and conversation in order to prepare them to face challenges and make them proficient in applying cognitive skills [2]. During early years the finer and gross motor skills of children are developed and they become interested in performing well in activities like writing and arithmetic. So the curriculum should provide guidelines for planning appropriate tasks that would help them in composing text without being distracted by poor motor coordination and letter formation [6].

Research shows that children prefer to work in cooperation with one another and prefer to get help from peers rather than teachers [10]; [13]. They show more turn taking behaviour which form attachments with others and show participation in educational and cooperative play activities. Thus, to enhance social development, a skillful teacher should be guided by a curriculum to select appropriate tasks that would serve as catalyst for social interaction and conversations and encourage their growth by pairing children or guiding conversation among the children about their common pursuit [2]. Not only that, they need to be guided that the best way to help children, to develop healthy lifestyle attitudes and behaviors is to provide children with love and nurturing that builds strong, positive self-images based on attributes other than

appearance e.g., kindness, trying hard, sharing, doing well in sports or school, etc. [14].

An early childhood curriculum should recognise the central importance of emotions in a child's development as well. The development of emotional competence is an essential foundation for academic and social functioning. Curriculum goals, activities, teacher-child relationships need to be well planned. In an emotion-centred curriculum, children approach materials and activities with relish and are optimistic about their ability to figure out things and get help both from adults and other children whenever they need it. In such a programme, teachers create relationships that support emotional development of a child. Programmes that lack emotional focus may restrict individual and culturally compatible interests and styles. Planned activities can encourage children to talk, write and play about important issues that might build a strong link between affective and cognitive developments. Selection of emotionally relevant activities by ECD teachers, might ensure children's sustained powerful explorations resulting in cognitive academic and emotional benefits [9]. Activities that help in emotional expression, like music and creative art forms could well occupy a substantial amount of space in a well planned ECD curriculum.

5. Conclusion

ECC and E programs in Botswana should introduce an appropriate national ECD curriculum which provides guidelines regarding activities that can enhance and interweave physical, social, emotional, as well as cognitive aspects for an overall enrichment and growth [5]. In the mean time it needs to make an effort to provide guidelines to the teachers, especially the ones who are not trained, through workshops and seminars regarding how to offer activities that would enhance the development of all the faculties of young children and lead to a holistic development. Giving emphasis to physical development is definitely well thought of, but neglecting cognitive, social, emotional aspects would be detrimental at such a tender age, as any lapse during early childhood would lead to an unbalanced developmental process. Each one of these developmental aspects is very important in its own right. And it is expected to provide them at tandem with well planned activities, using both indoors and outdoors materials that would cater to a holistic development. Perhaps it is also necessary to revisit the training curriculum of the teachers who were trained in ECC and E. As it could well be possible that those teachers were, in actual practice using relevant activities as well as suitable materials for the overall development of the children, and yet were unable to correlate the efforts and it's outcome due to limitations of the training!

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The Socio-Economic and Socio-Cultural Effects Contributing to Academic Excellence of Children in SAIL Townships Schools in India

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Abstract

The Steel Authority of India Limited (SAIL) the largest public sector undertaking of India having own townships for its employees is exemplary from corporate-social-responsibility point-of-view and provides the best living conditions in India with modernized health-care and education-systems.

The SAIL-run schools in these townships give excellent academic results. Seventy six thousand children take education in 140 schools with 2274 teachers. They have been performing exceptionally well at the board examinations both in English and in vernacular-languages with the 5th, 8th, 10th & 12th results touching 100% at one or the other location every year.

The administrative factors like the government policies & their execution and institutional parameters are responsible for these achievements. But, equally contributing are some unique socio-economic & socio-cultural factors present here.

This paper establishes the contribution of such unique socio-economic-cultural factors like the family-size, the social amenities, learning environment, cosmopolitan & competitive atmosphere etc in the excellent performance of the children in SAIL townships at different locations.

1. Introduction

Education is the best legacy a nation can give to her citizens especially the Children and the Youth. This is because the development of any nation or community depends largely on the quality of education of such a nation. It is generally believed that the basis for any true development must commence with the development of human resources. Much then is said that formal education remains the vehicle for socio-economic development and social mobilization in any society.

The factors responsible for good academic performance across the globe are divided into two broad categories namely the administrative factors at the government & institutional levels and the socio-economic factors. Much research has been done on the administrative factors responsible for good academic performance which include the

government policies, the local administration's implementation strategies, the institutions' physical facilities & soft skills like the buildings, furnishings, laboratories, libraries, play grounds, teachers' male-female ratio, age-mix & the teaching/subject skills.

Similarly, research is also not uncommon on the effect of socio-economic factors on children's academic performance. Issues like the financial status of parents, living conditions, home-learning conditions etc have all been addressed very well around the world and a lot of improvements are also reported based on the results. Multivariate analyses have revealed that socioeconomic advantage and achievement motivation are significant mediators of academic performance in children, independent of intellectual ability.

Why this Study?

The authors of this paper realize that in addition to the commonly known socio-economic factors, there are a number of other social & cultural factors which are little unknown to the common man and from which the world can benefit. A study of both these categories has been attempted. The study basically focuses on the situation prevalent in the townships of the steel giant of India namely the Steel Authority of India Limited (SAIL) at different plant locations, thousands of miles from each other.

2. Literature Review

In his book titled 'Class and Schools: Using Social, Economic, and Educational Reform to Close the Achievement Gap' (Author: Richard Rothstein) reviewed by Michael Williamson-2005 [1] it is mentioned that the issue of "Adequate Yearly Progress (AYP)" has dominated education policy debate. The one aspect is the hope that AYP will be used as a vehicle through which the federal government will finally foster quality education in America's public schools. There are others who view AYP as the tool to dismantle the traditional system of public schools. Rothstein carried out a thorough review of the social, cultural and economic issues associated with the gap in achievement among groups of students. He has also address the complex

of cultural and social variables in limiting the opportunities of children.

Programme for International Student Assessment (PISA) is a system of international assessment of students that focuses on reading and collection of data on students, their families & institutional factors that could help to explain the differences in their academic performance. Home background, according to PISA (2000), influences academic and educational success of students and schoolwork, while socio-economic status reinforces the activities and functioning of the teachers and students.

Where a child suffers parental and material deprivation and care due to divorce or death, or absconding of one of the parents, the child's schooling may be affected as the mother alone may not be financially buoyant to pay school fee, purchase books and uniforms, such child may play truant, thus his performances in school may be adversely affected (A.J.Wadkar, 1989)[2].

The learning environment that is full of barriers, or obstacles or distractions such as noise, gas/smoke pollutions and so on can constitute health hazards, which in turn affects or reduces students concentration or perceptual or conceptual focus to learning (Sprinthall, 1987)[3].

Anil Sharma in 2008 in his research paper titled "Education as a Major Corporate Social Responsibility in Bhilai Steel Plant" presented at the International Management Conference on 'Expanding Horizons of Business' at Indian Business Academy at Delhi India had established the contribution of industry in academic excellence. [5].

Steel Authority of India Limited (SAIL) is India's largest steel producer with a turnover of INR 48,681 crore (US \$ 9970 million) and a massive net profit of

INR 6175 crore (US \$ 1265 million) in 2008-09 [4]. It operates five integrated steel plants at Bhilai, Bokaro, Durgapur, Rourkela & Burnpur and three specialty steel plants at Salem, Durgapur and Bhadravati. Employs 1,20,000 steel men. Produced 12.5 million tons of saleable steel in 2008-09. Presently implementing a massive expansion plan to produce 23 MT of saleable steel by 2012.

3. School Education in SAIL Townships

The company runs one hundred & forty schools within its townships at various locations with nearly seventy six thousand children studying from class one to class twelve. The schools are affiliated to both Central Board of Secondary Education (CBSE) with English medium and the state education boards with vernacular languages as medium of instruction. The schools cater to the education needs of the children of SAIL employees as well as of supporting population like the security forces, employees of various government organizations (police, electricity board etc) shopkeepers, servants, rickshaw-pullers etc living in & around the townships.

Basics

It is interesting to observe from Table 1 that out of the 140 schools in SAIL townships the inclination towards vernacular schools (54.3%) is larger than English medium schools (45.7%). The girls in these schools are not lagging behind the boys and are a whopping 46.4% of the total students of 75975. Similarly lady teachers in these schools are also matching their students counter parts with 42.7% of the total 2274 teachers.

Table 1. Observation of schools in SAIL townships

Plant locations	Bhilai	Bokaro	Rourkela	Durgapur	Salem	Bhadra vati	Others	Total	%age
No. of English Medium Schools	23	22	02	02	02	00	13	64	45.7
No. of Vernacular Schools	25	21	04	09	00	02	15	76	54.3
Total Schools	48	43	06	11	02	02	28	140	100
No. of Boys	13820	14954	3171	2804	980	175	4780	40684	53.6
No. of Girls	14704	11304	1585	2694	685	172	4147	35291	46.4
Wards of Company employees	17718	7730	2858	1654	993	17	4192	35262	46.4
Non Employees' Wards	10806	18528	1898	3844	672	176	4789	40713	53.6
Total Students	28524	26258	4756	5498	1655	347	8937	75975	100
No. of Male Teachers	333	627	84	70	17	19	0153	1303	57.3
No. of Lady Teachers	418	227	54	117	37	03	115	971	42.7
Total Teachers	751	854	138	187	54	22	0268	2274	100

More interesting is the fact that the children of non employees or the supporting population out-number the employees' wards with 53.6% strength out of the total 75975 students.

The Results

The academic results for the last four years in the SAIL schools at four major plant locations are given in Table 2 to 5.

Table 2.
Bhilai Steel Plant - Bhilai (Chhattisgarh State)

Result	Class V	Class VIII	Class-X	Class XII
2006	100	100	--	E - 86 V - 84.3
2007	100	100	E - 92.9 V - 80.2	E - 85.9 V - 84.3
2008	100	99.6	E - 95.3 V - 77.9	E - 87.7 V - 79.6
2009	100	100	E - 90.3 V - 89.9	E - 85.8 V - 86.4
Avg.	100	99.9	E - 92.8 V - 82.6	E - 86.4 V - 83.6

Table 3.
Bokaro Steel Plant- Bokaro(Jharkhand State)

Result	Class V	Class VIII	Class-X	Class XII
2006	100	E - 92 V - 92	E - 99.2 V - 88.0	E - 89.8 V - 73.0
2007	100	E - 94 V - 95	E - 98.4 V - 95.0	E - 88.0 V - 75.5
2008	100	E - 95 V - 94	E - 97.8 V - 96.0	E - 87.2 V - 70.0
2009	100	E - 96 V - 95	E - 96.2 V - 89.0	E - 87.4 V - 86.6
Avg.	100	E - 94.3 V - 94.0	E - 97.9 V - 92.0	E - 88.1 V - 76.3

Table 4.
Rourkela Steel Plant – Rourkela (Orissa State)

Result	Class V	Class VIII	Class-X	Class XII
2006	100	E - 100 V - 90.0	E - 98.5 V - 84.0	E - 98.6
2007	100	E - 100 V - 92.0	E - 97.5 V - 87.5	E - 100
2008	100	E - 100 V - 96.0	E - 97.0 V - 93.0	E - 99.9
2009	100	E - 100 V - 97.0	E - 97.5 V - 88.0	E - 100
Avg.	100	E - 100 V - 93.8	E - 97.1 V - 88.1	E - 99.6

Table 5.
Durgapur Steel Plant - Durgapur(West Bengal)

Result	Class V	Class VIII	Class-X	Class XII
2006	100	98	E - 100 V - 94.3	V - 92.0
2007	100	99	E - 100 V - 86.8	V - 93.1
2008	100	98	E - 100 V - 92.3	V - 88.7
2009	100	99	E - 100 V - 93.0	V - 91.8
Avg.	100	98.5	E - 100 V - 91.6	V - 91.4

E=English

V=Vernacular

The results have been projected plant and location wise mainly to highlight the advantage of cosmopolitan atmosphere in specific cases. While the Class-V & Class-VIII exams in SAIL schools are conducted by the respective Education Departments of the plants themselves, the Class-X and Class-XII exams are conducted by the Central Board of Secondary Education and State Boards.

It is evident that the students have been doing extremely well at the lower classes with hundred percent results in Class-V and 94 to 100% in Class-VIII. The results of English medium schools are better. In Class-X, the results have varied from 78% to 100% but while the English medium schools have done exceedingly well in the States of Chhattisgarh, Jharkhand & West Bengal; they are not as good in Orissa. In Class-XII, the average results for vernacular schools have ranged from 76.3% to 91.4% and for the English medium schools from 86.4% to 99.6% reflecting better performance of the English medium schools.

The most significant factor about the results is that they are far better than the national averages in case of English medium schools and States' averages in cases of vernacular schools. The national averages for CBSE's Class-X & XII have been 88% and 81% in 2009. The State averages for Chhattisgarh Board of Secondary Education for Class-X & XII in 2009 have been 78.35% and 74.37% respectively indicating a large difference of 4.25% and 9.23% in Bhilai Steel Plant's results. It is noteworthy that the majority of students in the vernacular schools belong to the supporting population coming from weaker economic section of the townships.

4. Socio-Economic & Socio-Cultural Contributions

As said earlier, the government policies, the implementation strategies of the local authorities and the other administrative factors play a very important role in the academic performance of the students. But, the socio-economic and less focused socio-cultural factors prevalent in different societies play an equally important role.

The living conditions in the SAIL townships at Bhilai, Bokaro, Rourkela, Durgapur, Burnpur, Bhadravati and Salem are very different from other cities, towns and townships of India. Such miraculous performance of SAIL school students can hardly be attributed to a single major reason. But, it can be said with reasonable confidence that a number of small factors are contributing towards this miracle. The following description throws reasonable light on these socio-economic and socio-cultural contributions in the SAIL townships in academic achievements of the school students.

Home Background in SAIL Townships

From the PISA study, it is evident that the quality of parents and home background of a student goes a long way to predict the quality and regularity of the satisfaction and provision of a child's functional survival and academic needs. Poor parental care with gross deprivation of social and economic needs of a child, usually yield poor academic performance of the child.

Similarly, good parenting supported by strong economic home background could enhance strong academic performance of the child. This further predicts academic performance where the child is properly counseled in the choice of his/her courses and vocation that matches his mental ability, interest and capability whereas the children to the care of the illiterate mothers will find themselves roaming about the street laboring to make both the ends meet.

The striking unique-ness in the SAIL townships in this regard is the minimum status-differential amongst the residents who are all employees of SAIL. They all enjoy the SAIL wage-structure & perks which are among the best in the country. The supporting population also enjoys the patronage of the management to such an extent that even their children compete with the employees' wards.

Learning Environment

The environment plays very important role in the development of children. Markets and garages located near the houses have always posed a threat to students. Noise and pollution from these sources have always endangered students' life and

concentration. Therefore for an effective learning and high academic performance, residences in both rural, sub-urban & urban areas should be located off zones, characterized with smoke/gas pollutions, market centers or garages as conducive learning environments stimulate learning, understanding and high perception.

All the SAIL townships are spread into large areas divided into self sufficient sectors with bazaars, health centers, schools & residential units. The spaces for all these facilities are so earmarked that they do not interfere with one another's existence. Thus, the school students live in a truly 'learning environment' with no disturbances around the residential areas.

Physical fitness

Results show statistically significant relationships between fitness and academic achievement, though the direction of causation is not known. While more research is required, promoting fitness by increasing opportunities for physical activity during PE, recess, and out of school time does support academic achievement.

The SAIL townships' schools promote physical fitness of not only the students but also of teachers to the optimum level. Pranaayaam (breathing exercise) is compulsory for all the students & teachers alike after the school assembly every day. Mass PTs are organized at least once a week. Games & sports are taken seriously. The students doing well in sports & games are encouraged with suitable incentives. Regular medical checkups of students in the schools are arranged. Activities like NCC, Scouts & Guides etc are encouraged.

The physique developed through so much of efforts is bound to be the home for healthy brain as well !

Competitive atmosphere

Life is full of competition which could be healthy & unhealthy, both ! No teacher or parent wants the kind of competition that makes children unduly anxious, that interferes with their performance and creativity, or that makes them uninterested. Healthy competition on the other hand motivates to perform as well or even better than the people we come in contact with, interact & observe. Therefore, to eliminate competition eliminates opportunities to learn humility and grace. Research on the negative aspects of unhealthy competition is mostly solid, but using it as a rationale for eliminating competition altogether may limit the learning & creativity of the children.

The SAIL townships are very close knit societies. People know each other very well. The families are also equally involved with each other. Therefore, the

performance of one child is in the knowledge of all children and even the means to such performance are also known to others.

This situation leads to very healthy competitive atmosphere resulting into efforts by almost all the children making similar efforts in an Endeavour to surpass each other.

Cosmopolitan atmosphere

A cosmopolitan atmosphere comprises of people from different parts of a country coming from different socio-cultural backgrounds giving rise to a common cosmopolitan culture. The advantages of cosmopolitan culture over the uni-cultural societies are multifarious.

The employees in the SAIL plants & resultant townships come from all the parts of India. The atmosphere is truly cosmopolitan & interactive. The exposure to each others' cultures is so strong that it becomes a common knowledge for all the residents of these townships.

The performance of the children of such townships in various competitive examinations which have a local bias is, therefore, above average because of mutual exposure.

Ease of admissions and education

The overcrowding in the Indian metros has started forcing the parents to register their children for admission even before their birth. The stressed parents can hardly afford the luxury of taking proper care of their children.

The situation in SAIL townships is entirely different. Every parent is assured of admission and good education of his children in the SAIL schools. The situation is so comfortable that many parents are not even required to visit the schools themselves at the time of admissions of their grown up children.

The education in company run schools is available at negligible price.

The stress free admission and education facilities do provide an opportunity to the parents for taking the best possible care of their children who perform so well in the academics and extracurricular activities.

Easy communication

Communication is the process of transferring information from one source to another. Communication is commonly defined as "the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs". Communication can be perceived as a two-way process in which there is an exchange and progression of thoughts, feelings or ideas towards a mutually accepted goal or direction.

Effective communication is the strongest means of learning.

All the SAIL townships have their own network of communication. The free company telephone service is available to most of the residents. This facility contributes intensively in the academic discussions of employees' children with each other. It is not un-common to see a student talking to another for hours together trying to catch up with the studies or to excel further.

The townships have also allowed other service providers like BSNL, Tata or Airtel in the communication sector to spread their network resulting in easy and economical availability of alternative means of communication.

This situation is very largely contributing to the performance of SAIL children.

Small families

The advantages of small families include better financial condition of the family, better parental care and better health for the mother & the children. Thus A small Family is indeed a happy family.

It is rare to see families with more than two children in SAIL townships. The parents are enlightened and understand the advantages of small families. The children in such families, naturally, get the required amount of care and attention from their parents. Economically also the situation is very favourable. The parents are easily able to afford good education, coaching and tuitions for their children.

The results are on the expected lines. The children do very well in the exams and other activities.

Efficient tutors - systematic coaching

Gone are the days when tuitions were looked down upon in the society. Today, most of the parents can't think of their children's education without private tuitions or coaching. In fact, tuitions are fast becoming one of the 'essentials' in the proper development & education of children.

SAIL townships are little different in this respect that here **all parents** think of such a situation and arrange for appropriate tuitions or coaching for their children. The tutors are hard working and efficient. Coaching is systematic.

It is therefore no surprise that these students do so well in the board exams and competitions like JEE, AIEEE, PET, CPMT, PMT etc for admission to renowned professional colleges in engineering, medicine & law.

Proactive involvement of parents in school affairs

Across the globe, one of the strategies to bridge the gap between the schools & homes has been the inclusion of parents as educators (parent education). This involves training parents to participate proactively in their children's education by acting as 'first teachers' at home as well as participating in school settings. Parents are actively encouraged to assist their children in learning as well as to participate in developing the schools in their communities. As a result, parents and teachers work together to create a stimulating literate classroom environment and atmosphere. Parents are also encouraged to attend classroom sessions where they can witness/assess the learning process in person.

The parents in SAIL townships take active interest in the school activities of their children. The parents' teachers associations (PTAs) in SAIL township schools are very effective. They not only over see the academic activities but also encourage participation in sports, games, NCC, scouts, guides, cultural performances etc.

The positive and proactive involvement of parents provides necessary impetus to the children for doing well at the respective fronts.

The exam fever

With the examinations around the corner, students are bound to be under tremendous stress. But it is not just the students who are stressed as teachers and parents too face the same situation. Why do people get stressed? Adolescents are faced with the demands of their developmental tasks and that of a complex society. They need to acquire skills of adjustment to emerge into adulthood unaffected by these demands. If they lack these skills or if too many demands are made on them, they feel stressed.

Students are anxious as they are worried about whether they would be able to live up to the expectations of their peers, parents and teachers. Optimal anxiety motivates and keeps them ahead but over-anxiety disables. Anxiety is contagious and passes to other students, teachers and parents.

The exam fever grips the SAIL townships like no other virus does. The bazaars, the clubs, the social places - all bear a deserted look during the exam days. Social visits and events are postponed. Parents take utmost care that their children do not get distracted during these crucial days. It is not uncommon to see houses locked from outside with people inside.

The fever culminates into high performance of the children.

Mothers

A mother is a biological and/or social female parent of an offspring. Because of the complexity and differences of the social, cultural, and religious definitions and roles, it is challenging to define a mother. Mothers have historically fulfilled the primary role in the raising of children. Words would fail to describe the role of mothers in the development of their children. Unanimously would all agree that the best person to provide care, teaching & knowledge to the child is his mother ! But, availability of time has been a constraint with the mothers for the fulfillment of their dream of bringing up their children with affection, care & appropriate teachings.

Ladies in SAIL townships have all the time available on this earth at their disposal, thanks to the easily available maid servants and attached servant quarters in many houses. It is a blessing in disguise for their children as the time so available is mostly used by them looking after their children. They play responsible mothers in these townships.

Their children are blessed with good performance as a result.

Ease of transportation

Transportation is one of the major constrains in the fast moving life today. The time, energy & money required for commuting to the schools in big cities is quite telling on the academic performance of the students.

The SAIL townships are divided in number of sectors and each sector is normally self sufficient with bazaars, health centers and schools. Therefore, there is hardly any need for a child to travel long *distances to reach his school. Even those who cover some distance, they are able to do so very easily on their bicycles because of well-built empty roads during school timings.*

The saving of time in transportation to the school and stress free commuting does help the children doing better in the exams.

Innovation - `Common Notes'

The term **innovation** means a new way of doing something. It may refer to incremental, radical, and revolutionary changes in thinking, products, processes, or organizations. The goal of innovation is positive change, to make someone or something better. Innovation leading to increased productivity is the fundamental source of increasing wealth in an economy.

The parents in SAIL townships have been a little innovative too with respect to the studies of their children. A unique effort by the parents in these townships has emerged in the form of preparation of `common notes' for their children. If Mr.X prepares

notes on Physics, then Mr.Y gladly prepares them on Chemistry and they exchange them for each other's benefit. This cycle goes on even at micro level with one parent working on one topic in Physics and others working on other topics.

Consequently, their children benefit from their parents un-common 'common notes' !

Exchange of Information at Student/Parent level

Information is truly called 'power' ! Exchange of information among the members of a society is vital for the development of the society as well as its sustenance. Those members who lack information are likely to lag behind in the society. But the 'exchange of information' in most societies takes a formal shape with the society-elders deciding 'what' to share with 'whom' and 'how much' etc.

But, in SAIL townships, being close-knit-family-like societies, there is much broader exchange of information including 'What to study', 'Where to find', 'How to do it', 'When to complete' etc. There is almost a complete sharing of information & material. The sharing does not stop at school! It's sharing 'beyond school' ... and also on 'beyond academics'!

Life has actually adopted different dimensions in the SAIL townships where all information available with one student or parent is accessible to all others and all efforts on the part of one are possible for all others to make because some are neighbors, some are colleagues, some are friends and so on ...! The result is obvious, the excellent performance of the students!!

The Motivation to Study

Motivation is the internal condition that activates behavior and gives it direction; energizes and directs goal-oriented behavior. According to various theories, motivation may be rooted in the basic need to minimize physical pain and maximize pleasure, or it may include specific needs such as eating and resting, or a desired object, hobby, **goal**, state of being, ideal, or it may be attributed to less-apparent reasons such as altruism, morality, or avoiding mortality..

One of the strongest tools in the hands of human beings to achieve desired results is goal-oriented motivation. Young children have a great ability to see the past and to learn for future. Therefore, it is easy to motivate young children with the help of past performances and future promises.

In a business family, a child is given to understand that ultimately he will operate the business regardless of his academic achievements. In steel cities, however, one sees that those who are more qualified get better status jobs with better earnings as compared to less educated ones!

This prompts even the non executive employees of SAIL townships to motivate their children to study hard to score good marks & ranks enabling them to get a seat in renowned professional institute.

No False Courtesy

World over, courtesy is common, which normally restricts itself to the formal behavioral aspects in human lives. A man would be considered discourteous if he does not follow the normal formalities of meeting, greeting & treating his fellow society-men. In elite societies, people make social calls with prior appointments.

But, the SAIL townships are exemplary in many respects. One of the major attributes of these townships is its informal-cordial culture! The residents are close to each other. They involve with each other's affairs. They call on each other's houses frequently. And the calls are uninformed, with no prior appointments! The social inter-mingling is a real treat to the soul!

The social interactions imbibe the children-related issues too with sharing of best academic information & practices. Thus, the 'no-false-courtesy' culture leads to inculcation of best academic environment with enviable performance at the examinations!!

5. Contribution to knowledge

Education is thought to be the responsibility of the government. Further, it is widely believed that public schools provide a better quality of education. Our analysis reveals that it is the industry which is the biggest end-user of the education and the industry itself, has the necessary ingredients to nurture quality education. Models, such as the SAIL Model on education, need to be worked out globally, so that industry can utilize its inherent advantages on the parameters listed in this research paper and create its own infrastructure to provide quality education. This will serve not only the industry but also the mankind in general.

Society plays a great role in supplementing the efforts of the formal education system in shaping the academic excellence of school children. There appears a need to deliberately inculcate the competitive atmosphere, the motivation to study and easy exchange of notes at student/parent level.

The economic strength of the industry may be gainfully utilized by the education system to provide quality education at an affordable cost.

There is a need to redefine the value system in the Society so that the false courtesy may not prevent the children from the free interactions; that the parents discuss education of their children during their social visits and that they devote a little more time to discuss Academics, the School, the Class-mates & Extracurricular activities with their Children.

6. Conclusions

The authors believe that the paper has been able to successfully establish that the unique socio-economic & socio-cultural conditions prevalent in SAIL townships in India are contributing very significantly to the academic excellence of the children in the schools of these townships.

The atmosphere in townships of other public sector undertakings in India is not very different. The authors are convinced that major percentage of admissions to the top professional institutions in the country comes from these public sector townships.

The socio-economic-cultural parameters contributing so effectively to academic excellence in public sector townships in India can be tried to be inculcated in other parts of the world too for similar results.

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Rethinking Undergraduate Curricula in Comprehensive Universities: A South African Case Study

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Abstract

The purpose of the research was to determine similarities and differences between the National Diploma and Undergraduate Degree in Human Resource Management as offered by a newly formed South African comprehensive university. A case study research approach was followed with data gathered from documents, interviews, and focus group discussions. Results showed that the diploma is on average more hierarchical than the degree; almost no knowledge is acquired through procedures in either qualification; the skills acquired in both qualifications are almost entirely analytical with no technical skills acquired. In-service training does not form part in either of these two qualifications.

1. Introduction

South Africa's higher education system has post 1994, undergone significant changes, many of which were informed by the need for greater democratization. Amongst the changes effected to the higher education sector were the reduction of the number of higher education institutions and their re-categorization into one of three types: universities, universities of technology and comprehensive institutions [1], [2]. The last of these types, namely comprehensive universities, emerged as result of a merger between universities and what were traditionally referred to as technikons [3], [4].

One of the challenges in this kind of merger was that technikons and universities had traditionally offered different programs. Technikons focused on the provision of practical career-focused and work-integrated learning that combines theoretical knowledge with applied competence [5]. Universities, on the other hand, offered general formative and career-orientated/ professional education, focusing on teaching and in-depth research. It follows that comprehensive universities would therefore have been expected to offer a diverse

range of university programmes (i.e. vocational, career-focused, professional and general/formative), that is, both university and technikon type programmes [3].

This, bringing together of two different types of educational providers with different types of programs, presents significant challenges for comprehensive universities. How, for example, will programme diversity be maintained? At what levels is integration possible and desirable? Where is it possible to construct articulation pathways, and what form will they take? [6] The answers to these questions have implications for the way in which curricula are organised and, in particular, for the way in which knowledge is conceived and produced [4], [6]. Comprehensive universities now need to consider whether to retain, redesign, consolidate or discontinue existing qualifications or, alternatively, to develop new qualifications [1]. Qualification structures should therefore be developed that will allow comprehensive institutions to define their unique roles within the restructured South African higher education landscape.

These are also some of the questions investigated in the South African-Norway Tertiary Education Development (SANTED programme), an initiative in which the presenters of this paper were involved as research participants. The SANTED project in which we participated is a joint venture of the Norwegian Agency for Development Co-operation (NORAD), the South African Department of Education, and selected South African Higher Education Institutions. The overall aim of the project is to review the academic programme structures in specific academic fields at comprehensive universities in South Africa, particularly in fields or where "university" and "technikon" type qualifications/programs have been brought together in a suite of programmes located in a single academic department, school, or faculty. It is within this framework that the researchers examined the curricula of the National Diploma and

Undergraduate Degree in Human Resource Management (HRM) currently offered by a South African comprehensive university.

The National Diploma in HRM is designed to ensure the incumbent's effectiveness in the workplace and to provide a solid foundation that is necessary for pursuing a career in this specialised field [7]. More specifically the national diploma aims to develop graduates who can demonstrate focused knowledge and skills in the HRM field and to apply their learning to a particular employment context. The undergraduate degree in Human Resource Management, on the other hand, aims to provide students with a broad knowledge base, theory and methodology of the HRM discipline. This will enable graduates to demonstrate initiative and responsibility in an academic or professional context [7]. Both these qualifications further enable the graduates to register in a professional category at the South African Board for People Management (SABPM).

2. Purpose of the research

The main purpose of the research was to determine similarities and differences between the National Diploma and Undergraduate Degree in Human Resource Management as offered by a South African comprehensive university. More specifically the research aimed to determine the extent to which:

- The knowledge base of these two types of programs was *hierarchical* in nature (i.e. the importance of vertical sequencing in program design);
- The knowledge base reflected *general* and/or *particular* principles and procedures;
- Exit level outcomes could be regarded as *strategic* (leading to change/innovation in a particular field) or *operational* (organizational and/or administrative) in nature;
- Exit level outcomes developed *technical*, *analytic* and/or *research* skills;
- Teaching and learning methods could be classified as *discursive*, *practical* or *work-based* (in-service learning);
- Assessment practices such as *semester tests*, *assignments*, *examinations* and *other*.

3. Methodology

In this case study, the two programs compared with each other were the National Diploma (Human Resource Management) and Bachelor of Commerce (Human Resources Management). Data was collected and analysed with a view to identify similarities and/or differences in the programmes with specific reference to their knowledge demands, skills and competencies, teaching and learning

methods and assessment procedures. In terms of the analytic model, the analysis was to be conducted at module level with the aim of establishing the proportion (percentage) of knowledge content that fell into each of the above-mentioned categories.

A combination of quantitative and qualitative techniques was used for data gathering and analysis. These included document analysis (stage 1), interviews, focus group discussions, classroom observation (stage 2) and surveys (stage 3). For purposes of this paper, the results of stage 1 are reported. Finally, literature related to the aspects investigated was consulted throughout and insights gained from these reviews were then used to explain, justify, and/or contextualize the research findings and, based on conclusions drawn, to make recommendations for the way forward.

4. Results

The results of the research are reported below.

4.1 Knowledge Base

The knowledge base of the two qualifications was analysed in terms of hierarchical sequence and general and particular principles or procedures. *Hierarchical* implies that sequence is important, i.e. knowledge content can only be dealt with after having mastered other knowledge contents. *Non-hierarchical* implies that sequence is not important. The results of the hierarchical comparison of the qualifications are reported in Table 1.

Table 1. Hierarchical comparison of the National Diploma and Undergraduate Degree in Human Resource Management

	Diploma	Degree
Year 1	13	0
Year 2	100	50
Year 3	100	50
Average	66	35

* Results reported as a percentage

*The closer to 100%, the more hierarchical the qualification

The results in Table 1 indicate that there is a difference in hierarchy between the three years of the Diploma. Most of the first year modules are non-hierarchical, whereas the second and third year both are fully hierarchical. The diploma is more hierarchical on average. As far as the degree is concerned, a similar difference exists in the first year - most of the first year modules are non-hierarchical, but the second and third year indicate an equal spread between hierarchical and non-hierarchical modules. The degree is on average more non-hierarchical than the diploma.

General and particular principles or procedures indicate the extent to which knowledge is contained and were categorised as follows:

- General principles: Knowledge pertaining to multiple contexts and acquired through reasoning.
- Particular principles: Knowledge pertaining to a specific / particular context and acquired through reasoning.
- General procedures: Knowledge pertaining to multiple contexts and acquired through action / doing.
- Particular procedures: Knowledge pertaining to a specific / particular context and acquired through action / doing.

The results of the principles and procedures applied in the qualifications are reported in Tables 2 and 3 below.

Table 2. Principles applied in the National Diploma and Undergraduate Degree (HRM)

	General Principles		Particular Principles	
	Diploma	Degree	Diploma	Degree
Year 1	27	100	53	0
Year 2	41	100	39	0
Year 3	50	60	30	30
Average	37	85	43	12

* Results reported as a percentage

*The closer to 100%, the more general and particular principles are applied in the qualification

Table 3. Procedures applied in the National Diploma and Undergraduate Degree (HRM)

	General Procedures		Particular Procedures	
	Diploma	Degree	Diploma	Degree
Year 1	10	0	10	0
Year 2	10	0	10	0
Year 3	10	5	10	5
Average	10	2	10	2

* Results reported as a percentage

*The closer to 100%, the more general and particular procedures are applied in the qualification

From Tables 2 and 3 it is evident that almost all of the three years of the Diploma fall in the category of knowledge acquired through reasoning, whereas the balance is knowledge acquired through procedures. Acquiring of the general (as opposed to particular) principles takes place on a rising scale from the first to the third year. The reverse takes place with regard to particular (as opposed to general) principles: they decrease. As regards the degree, all knowledge is acquired through reasoning

of general principles in the first and second year; acquiring of the general (as opposed to particular) principles takes place on a decreasing scale from the second to the third year. On average, almost no knowledge is acquired through procedures as indicated in Table 3.

4.2 Exit levels outcomes

The exit level outcomes of the two qualifications were assessed in terms of competencies (strategic and operational) and skills (technical, analytical and research). Strategic competencies refer to the exit level outcomes that inculcate strategic competencies (i.e. innovation) whereas operational competencies inculcate competencies on a non-strategic nature (i.e. organize, control, administration).

The results of the comparison of the competencies acquired from the two qualifications are reported in Table 4 below.

Table 4. Competencies developed in the National Diploma and Undergraduate Degree (HRM)

	Strategic		Operational	
	Diploma	Degree	Diploma	Degree
Year 1	13	0	87	100
Year 2	34	30	66	70
Year 3	40	40	60	60
Average	27	25	73	75

* Results reported as a percentage

*The closer to 100%, the more strategic and operational competencies are acquired in the qualification

The results in Table 4 indicate that both strategic and operational competencies are prevalent in all three years of the diploma. As regards the degree, a similar situation is found in terms of operational competencies. However, no strategic competencies are developed in the first year of study for the degree. On average the difference between the two qualifications in both strategic and operational competencies are relatively small.

The skills acquired in the two qualifications were differentiated in terms of technical, analytical and research skills. *Technical* skills relate to exit level outcomes that inculcate technical skills (i.e. computer skills). *Analytical* skills relate to exit level outcomes that inculcate analytical skills (i.e. methodological and investigative). *Research* outcomes relate exit level outcomes that inculcate research skills (i.e. collect, organise and interpret data). The results of the skills comparison of the two qualifications are reported in Table 5 below.

From Table 5 it is evident that the skills acquired in the diploma are almost entirely analytical in the first year, and decrease to the third year, whereas research skills increase from very low to almost half

the skills in the third year – no technical skills are the acquired at all.

Table 5. Skills acquired from the National Diploma and Undergraduate Degree (HRM)

	Analytical		Research	
	Diploma	Degree	Diploma	Degree
Year 1	87	100	13	0
Year 2	66	100	34	0
Year 3	60	70	40	30
Average	73	88	27	12

* Results reported as a percentage

*The closer to 100%, the more analytical and research skills are acquired

The skills acquired from the degree are fully analytical in the first and second year, and decrease in the third year, whereas research skills increase from nothing to about a third in the third year (less than in the diploma). No technical skills are acquired at all.

4.3 Teaching and learning methods

Teaching and learning were analysed in terms of discursive, practical and in-service methods. Discursive methods relate to lectures, seminars, and textbooks. Practical methods relate to workshop, laboratory and studio. In-service learning methods relate to on-the-job/ site experience, formal internships and work integrated learning. The results of the comparison of the teaching and learning methods are reported in Table 6.

Table 6. Teaching and Learning methods applied in the National Diploma and Undergraduate Degree (HRM)

	Discursive		Practical	
	Diploma	Degree	Diploma	Degree
Year 1	100	100	0	0
Year 2	100	100	0	0
Year 3	100	75	0	25
Average	100	90	0	10

* Results reported as a percentage

*The closer to 100%, the more discursive and practical learning methods are utilised

In the diploma, all teaching takes place in the class-room through lecturing methods in all three years. No in-service training and practicum is done. In the degree, the first and the second year are taught fully through class lectures, and in the third year some practical work is done. No in-service training is done.

4.4 Assessment procedures

The assessment procedures were analysed in terms of class tests and semester tests, tutorials, practicum/ laboratory work, examination, and other (i.e. projects, assignments, etc.). Results showed that none of the two qualifications makes use of class tests, tutorials and practicum's as assessment methods. Other results are reported in Table 7 below.

Table 7. Assessment procedures utilised in the National Diploma and Undergraduate Degree (HRM)

	Semester Tests		Exam		Other	
	Dip.	Deg.	Dip.	Deg.	Dip.	Deg.
Year 1	25	25	50	50	25	25
Year 2	25	25	50	50	25	25
Year 3	25	10	50	50	25	40
Average	25	20	50	50	25	30

* Results reported as a percentage

From Table 7 it is evident that semester tests and assignments (other) are the only procedures where assessment takes place for both qualifications, other than the examination.

5. Discussion

The main purpose of the research was to determine similarities and differences between the National Diploma and Undergraduate Degree in Human Resource Management as offered by a newly formed South African comprehensive university. Data were collected and analysed with a view to identify similarities and/or differences in programs traditionally offered at technikons and universities respectively with specific reference to their knowledge demands, skills and competencies, teaching and learning methods and assessment procedures. The results are discussed below.

5.1 Knowledge base

Results indicate that the structure of the degree program is less hierarchical than that of the diploma program. This implies that the diploma is rigidly sequenced with all modules being mandatory. The degree on the other hand, is less rigid with the option of mandatory as well as non-mandatory modules.

Results also showed that both the degree and the diploma programs are 'academic' in nature, in that both seem to focus on knowledge acquired through reasoning. The two programs differ from each other with respect to the kind of 'academic' knowledge that is prioritised, the sequence in which this is done and the attention being paid to 'practical' experience. Indications are that the *degree* program focuses

primarily on *knowledge of principles*, first emphasizing knowledge of general principles (first and second years), gradually scaling down this emphasis in favour of an emphasis on particular principles (second and third years). On average, almost no knowledge is acquired through procedures. Although it does incorporate practical examples and practical work as part of the course, the degree program does not focus specifically on workplace learning and placement. The *diploma* program, on the other hand, focuses equally on the acquisition of knowledge of *principles and procedures*. In direct contrast to the degree program however, the focus on knowledge of general principles increases on a rising scale from the first to the third year, with the reverse happening to knowledge of particular principles – this decreases from the first to the third year. In the diploma, almost all of the three years fall in the category of knowledge acquired through reasoning, whereas the balance is knowledge acquired through procedures.

5.2 Exit level outcomes

Results indicate that there is no difference in the focus that the degree and diploma programs respectively place on the development of operational and strategic competence with the emphasis being on operational competence throughout and a focus on strategic competence being added in the third year only. Indications are, moreover that the degree and diploma programs are similar in that neither focuses on the development of technical skills. Both qualifications however, differ in the extent to which they are aimed at the development of analytical and research skills, with the diploma leaning more towards the development of the latter than the degree program does. In the degree program, the sole focus in the first and second years is on the development of analytical skills. This focus changes in the third year with the development of research skills increasing from none in years 1 and 2 to a third in year 3. In the diploma program, the development of analytical skills is the sole focus of the first year only. Thereafter the focus shifts progressively to the development of research skills, which increases to approximately 50% in the third year.

5.3 Teaching and Learning

Classroom teaching and learning in the diploma tend to occur mainly in the form of formal lectures. No in-service training and practicum are done. In the degree, the first and the second year are taught fully through class lectures, and in the third year, some practical work is done. No in-service training is done.

5.4 Assessment

Final analyses indicate no difference in the assessment instruments used in the programs or in the weight that these carry. Both programs use only semester tests, assignments and examinations as assessment instruments, with tests and examinations each contributing 50% to students' final marks.

6. Conclusion

In conclusion, the purpose of the study namely to explore the similarities and differences between the National Diploma and Undergraduate Degree, has been achieved. Combined, the results show that the diploma is on average more hierarchical than the degree; almost no knowledge is acquired through procedures in either qualification; the skills acquired in both qualifications are almost entirely analytical with no technical skills acquired. In-service training does not form part in either of these two qualifications. Both qualifications use the same traditional assessment methods that consist of exams, semester tests and assignments.

From the above results, it is thus evident that at present, only minor differences exist between the two qualifications in terms of the knowledge and skills acquired, teaching, and learning methods and assessment procedures. Since the purpose and outcomes of these qualifications differ fundamentally it follows that the design of the respective qualifications should differ significantly - in order to attain the purpose and outcome. The study thus highlights the need to re-curriculate both qualifications to ensure that future educational practices are based on sound and proven goal-oriented and goal-driven teaching and learning.

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Session 5: Education Policy and Leadership; Counsellor Education

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Examining the Role of Associate Teachers – Perspectives from the Field

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Abstract

Associate teachers play a significant role in the preparation of pre-service teachers in Canadian universities. The literature on the subject indicates that the practicum component of the pre-service teacher education is considered by teacher candidates to be their most valuable learning experience. Therefore, Faculties of Education are constantly exploring new ways of engaging associates in re-imagining their role and clarifying expectations and support from the faculty. This paper presents preliminary findings from a survey of associate teachers conducted by the Faculty of Education at a mid-size, comprehensive university in south-western Ontario, Canada. The survey explored the perceptions of associate regarding their role, and sought feedback on supports that the faculty could offer to increase their effectiveness in this role. The study found that associates enthusiastically embrace their role as mentors and/or experiential learning specialists, and recommended closer ties with faculty personnel as collaborative opportunities.

1. Introduction

Associate teachers play a significant role in the professional and social development of teacher candidates. The University of Windsor, Faculty of Education, Ontario, Canada, values the opportunity to actively collaborate and consult with associate teachers in an effort to continually improve the Field Experience component of its Pre-Service Teacher Education Program. To this end the Faculty of Education sought the perspectives of associate teachers in the four school boards in which teacher candidates complete the practice teaching component of their Bachelor of Education degree. A review of extant literature was conducted to explore teachers' perceptions of their role as associate teacher, the support the faculty advisor may be able to provide

to them as associate teachers, and finally, recommendations from associates concerning strategies to strengthen the triumvirate relationship – teacher candidate/associate teacher/faculty advisor.

2. Literature review

The study explored the perspective of associates regarding the nature of the relationship between the associate teacher, teacher candidate, and the faculty advisor. The study was undertaken as Beck and Kosnik suggest, as a 'joint inquiry' to identify potential strategies and/or recommendations that may strengthen this relationship further [1]. They cite the importance of clarifying the expectations of the associate role among the members of this triumvirate relationship.

The relationship between associate and teacher candidate has been identified as critical to successful teaching practice [4]. Two conceptions of the associate role are identified as either a practical apprenticeship model introducing students to the realities of teaching, or a critical dialogical model in which associate intervention is considered to be paramount to the development of the teacher candidate [1].

Associate teachers sometimes report stress and anxiety associated with their role. Research suggests that the collaborative relationship between the associate and faculty personnel can alleviate anxiety. As an example, MacDonald, Baker and Stewart suggest that the stress associates may experience during teaching practice could be reduced through closer contact with faculty personnel [6].

3. Methods and results

During 2008, associate teachers who participated in the field experience component of the pre-service program responded to a Faculty of Education associate teacher survey.

The survey was adapted from the work of Beck and Kosnik [1, 2]; Duquette [3]; Faire [4]; Joong [5]; Macdonald, Baker and Stewart [6]; Mujawamariya [7], Neil [8]; and Tuckman [9].

A variety of questioning styles were utilized including: open-ended questions which invited associate teachers to share their thoughts and insights; questions that asked associate teachers to rank order variables in terms of their importance; and finally, questions that asked associate teachers to respond to a number of statements indicating to what extent they agreed or disagreed. All responses to this questionnaire were anonymous, and have been kept in confidence.

Preliminary findings suggest that associate teachers enthusiastically support teacher candidates as newcomers to the teaching profession. Responses to defining the 'role' of the associate teacher were categorized as follows: 1) mentor (modeling/coaching/reciprocal learning to nurture and support the success of teacher candidates); and 2) experiential learning specialist (providing the reality of classroom experience/sharing pedagogical techniques and skills). Furthermore, the research findings indicate that orientation for associate teachers concerning the expectations of their role during the practicum was viewed as the most supportive aspect the faculty could provide.

The survey also shed light on Associate perspectives concerning recommendations to improve the Pre-Service Program; the Field Experience Practicum, and the triumvirate relationship of teacher candidate/associate teacher/faculty advisor. Associates comments suggest a need to clarify expectations, develop stronger links between course work and practicum through the development of relationships between faculty and school partners. Associates also noted the importance of assessment in the classroom, and that teacher candidates require more experience and exposure to this aspect of pedagogy. And lastly, with regard to the role of Associate Teachers, the participants recommended development of closer ties with the faculty advisor facilitated through additional school visits and opportunities for conferencing.

4. Conclusion and recommendation

In conclusion, the findings highlight the need to clarify the expectations of the associate role through orientation and closer collaboration with faculty personnel. The results and analysis of the

data will be used to develop future proposals to enhance the triumvirate relationship as an essential component of the pre-service program.

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Can Demonstrative Computer Animation Accelerate Intuitive Conception of Gravitational Acceleration?

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Abstract

The purpose of this study is to see if students can develop the concept of acceleration without presenting the explicit knowledge but by demonstrative simulations instead. The accelerated velocity is represented by a free fall of an apple from the tree. The constant velocity is presented by the flight of a bird towards the tree. The students marked the displacements of these two objects at six successive equal time intervals right after a real time demonstration. The simulations were run twice by slowing down the speeds at two stages. The students marked the displacements again after the slow motion demonstrations. Statistical analyses of student responses displayed significant improvements in achievement. Although not all of the students have achieved the expected outcomes many of them may use their experiences gained from simulations to construct more accurate mental models, and to form a bridge between real-world phenomena and scientific formalisms.

1. Introduction

Many scientists benefited from their intuitions to be able to make universally known discoveries. Archimedes, Newton, Mendeleev, Tesla and Einstein are the best known examples. Since the evolution of human brain is not as fast as knowledge expansion an average student of our time has to learn much more physics than Newton had ever discovered.

Conceptions of students about the natural world are quite different from those of scientists. We wonder if the intuition can be accelerated by some interventions despite Piaget's warning: "In the area of logico-mathematical structures, children have real understanding only of that which they invent themselves, and each time that we try to teach them something too quickly, we keep them from reinventing it themselves. Thus, there is no good reason to try to accelerate this development too much; the time which seems to be wasted in personal investigation is really gained in the construction of method" [1].

The nature and the nurture of conceptual change that starts with intuitive concepts are still secreted to be demystified. We only know that the intuitive conceptions of students before learning are not easily alterable through direct instruction [2]. Educators should take into account the students' intuitive knowledge in various domains in instructional design. Dykstra et al. [3] outlined ways that physics teachers could diagnose students' differing conceptions about the relationship between force and motion and then induce them to transform these conceptions. Educators should also activate their own cognitive forces to configure existing concepts through differential interventions, and enriched experiences. A variety of researchers converge on implicit learning. Reber defines implicit learning as "acquisition of knowledge that takes place largely independently of conscious attempts to learn and largely in the absence of explicit knowledge of what was acquired" [4].

The product of implicit learning is often called tacit knowledge which has been defined as "procedural knowledge that guides behavior but is not readily available for introspection" [5]. Tacit knowledge has been found as a significant predictor of success. Successful individuals have extended tacit knowledge as well as having explicit knowledge essential for their discipline. Tacit knowledge is a constructive force that wires learning in important contexts, in every setting [6]. The failures in acquiring and using tacit knowledge when needed may underlie many difficulties that people show in school and in their job. They assert that students should not only be taught the explicit knowledge required in a discipline (e.g. the formulas of physics), but they should also get tacit knowledge that is important in that discipline (e.g., how physicists conceptualize a project or how they make a discovery). According to them, the first step should be to analyze the tacit knowledge that is fundamental to a discipline, and the second step should be to design vehicles for curriculum and assessment that teach both tacit and explicit knowledge required in the discipline [7] agreed with Westcott [8] that there are individual differences in intuition. Reber [4] expected limited or no individual differences in implicit learning and hence intuition. However, the central view about

individual differences in intuition is that everyone has access to intuition, but there are individual differences in the speed and accuracy of usage. Intuitive conceptions may work both for and against educators and learners. To be able to determine the extent, to which a particular one is helpful or harmful, requires a detailed analysis of both the intuitive conception and the context in which it is used.

2. Aim of the Study

In this study we investigated if students from 5th, 6th, 7th and 8th grade levels could develop intuitive conceptions about accelerated and constant velocity motions without conscious attempts to learn the subject, without being presented the explicit knowledge about the subject, but by observing the motion of the objects from a computer animation. The accelerated velocity is represented by a free fall of an apple from a tree. The constant velocity is presented by the flight of a bird towards the apple tree. The major questions of this study are:

- Students discriminate between constant velocity and accelerated velocity motion by estimating the position of the objects per unit time?
- Does computer animation have a significant effect on discriminating between motion with constant motion, and motion with accelerated velocity?
- Are there significant differences among students with respect to grades in so far as to tasks mentioned in the first and second questions?

The tacit knowledge is a significant predictor of success in instruction [5]. Intuition manifests itself as knowledge structures that predispose individuals to think and act in particular ways without much conscious reflection. Therefore students' system of beliefs and intuitions may either match the scientifically accepted concepts or may be incompatible with scientific theories and knowledge. Cahyadi and Butler assert that students were better able to answer correctly the problems in idealized cases than the problems in real-world cases. They conclude that using contrasting situations (i.e. with and without an idealization) is a useful teaching tool [9].

3. Selected conceptions of students

A common intuitive rule among students is that "constant motion requires a constant force". Watts [10] asked 100 London students, who are 13, 14

and 17 years of age to discuss their idea of force, such as a person sledging down a hill. Many students intuitively believe that constant motion requires a constant force.

Jimoyiannis and Komis asked 90 students (15-16 years old) to compare the final velocities of two balls falling from the same height, one of which has the mass twice of the other. About 50 % of the students told that the speed of the ball is proportional or correlated to its weight. Only 20 % of students anticipated that the balls have the same velocity [11].

Osborne asked the students to identify the total force acting on a thrown tennis ball, on the way up, at the top and on the way down [12]. Only 5.7 % of the students mentioned that the gravitational force is always down to earth in all of the phases of the experiment.

According to Newton's third law action is equal to reaction equal in magnitude and opposite in direction. Savinainen et al commonly indicate that most students have problems in understanding Newton's third law [13]. Minstrell (1982) asked a physics class at an American high school to draw forces acting on a book stationary on a table [14]. Approximately 50 % of the class believed that gravity and the table were exerting opposite forces. The other 50 % believed that only gravity was exerting a vertical force. Gunstone & Watts report that any students believe that there is no force acting on the object if it is not moving [15].

The findings of Brown's study showed that only 5 % of the students who have taken traditional high school physics instruction could state that the forces will be equal in a head on collision between a large ball and a small one [16]. Most of them generally think that heavier object exerts greater force than the lighter object. Research findings also suggest that conventional instruction is not effective in dealing with misconceptions [11]. So, to be aware of students' existing intuitive notions about scientific concepts and to design instructional equipment considering their beliefs is important for educational settings.

Visualization of phenomena through such techniques as computer-animations, simulations, video, demonstrations, and models can contribute to students' understanding of physical concepts by attaching mental images to these concepts. Cadmus [17] states that these visualization techniques not only allow the students to see firsthand how things behave, but also provide them with visual associations that they may capture, and preserve the essence of physical phenomena more effectively than do verbal descriptions.

4. Procedure of the Study

We conducted the study in two urban primary schools where majority of students are coming from lower middle class. Totally 283 students were involved in the study. The “force and motion” concepts are studied in Grade 7. Because we did the study at the beginning of first semester in School OPS 5th, 6th and 7th grade students had not studied the science of motion. But we accomplished the study at School KSG at the beginning of the second semester, 7th grade students had just studied the science of motion the others had not covered motion concept by then. Due to time and length limitations in this paper we will present the results for only the total sample.

Students’ perception of constant or increasing displacement of an object in equal time intervals is the major dependent variable of this study. A computer animation was prepared to represent the motion of two different objects namely the free fall of an apple, and the steady flight of a bird. The Figure 1 illustrates the user interface of it. One can set a constant velocity for bird and/or control the speed of the motion (i.e. gravitational acceleration, velocity of bird).

Step I: One of the researchers showed the real time computer animation to the students by using a projector in their regular class hour, and in their everyday classroom settings. Bird’s speed was set to constant, and gravitational acceleration was set to $g=10 \text{ m/sec}^2$. Thus we assume that students observed the objects in their original velocities. In the student version of the animation there was no clue about the “bird’s speed”. The “Speedometer” was slowing down the “bird’s speed” and the “gravitational acceleration” simultaneously.

Step II. Right after watching the movie in real time (when $g=10 \text{ m/sec}^2$) the same researcher asked the students to mark the positions of these two objects within six equal time intervals along a straight vertical line and along a straight horizontal line respectively.

We call this task “mark the position” test. The measures obtained from these markings comprise the Pre-test data. In order to assure the validity of the instrument six teachers who are actively teaching to sixth, seventh and eighth graders gave feedback about the validity of the test software and the “Mark the Position” scale. All of the teachers reported that the tasks expected of students are appropriate for assessing the objectives of the study. Maturation effect is almost none because Post-test had been given one hour after the Pre-test. In this period there is almost no intervention but the animation.

In nature, if the movement of an object occurs too fast human eye may not be able to perceive the details of this motion. In order to comprehend the

basic differences between the two motions, the students first watch the animation as authentically as possible, then with slower motion and lastly with the slowest motion.

Step III. After watching the animation in three modes of speed (authentic, slower, slowest), the students were again required to “mark the positions of the apple and of the bird along vertical and horizontal lines respectively for six successive equal intervals of time. This is to be the Post-test.

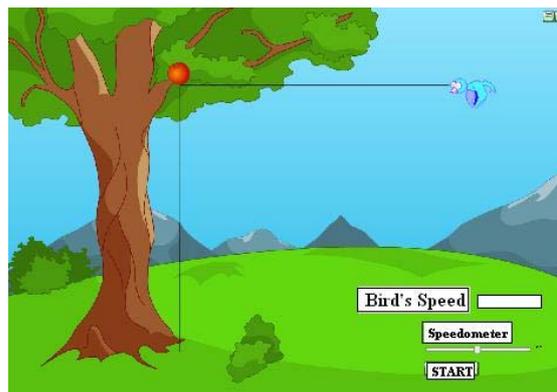


Figure 1: User interface of simulation used in the study (With the courtesy of Volkan Bal)

The four main categories of students’ markings are as follows:

- Increasing: if the object’s successive displacements in time intervals is increasing,
- Constant: if all of the displacements are not changing for successive time intervals,
- Decreasing: if it decreases,
- Other: if successive displacements are irregular, random or some regular pattern other than specified above.

Two judges scored the markings of students considering the motion of the objects presented in the computer animation by using the same criteria set by the researchers. The students who considered the gravitational acceleration of free falling apple as increasing got 1 point from the evaluation for this task. The students who recognized the constant displacement of the bird at successive equal time intervals and reflected this notion by their markings got 1 point for this particular task. The markings endorsed the other categories got 0 point.

The correlation between the two sets scores obtained from judges is found to be .793. The correlation between Pre-test and Post-test scores is .822. Judges agreed upon the final categorization of all markings after the reliability check.

5. Major Findings of the Study

The Table 1 shows the distribution of Pre-test and Post-test markings of all students (N=283) for apple's motion as they perceive.

Table 1. The students in terms of their markings of successive displacements of a free falling apple

Pre-test Apple Displacement	Post-test Apple Displacement				Total
	Incrs.	Constant	Decrs.	Other	
Increasing	13			6	19
Constant	35	42	10	18	105
Decreasing	28	4	14	13	59
Other	26	11	13	50	100
Total	102	57	37	87	283

Although 102 students which is more than one third of all seem to have perceived the gravitational acceleration in the Post-test two third of the students did not grasp the concept of acceleration. Table 2 displays the frequencies of all students in terms of their markings of successive displacements of a bird flying with constant velocity.

Table 2. The students in terms of their markings of successive displacements of a bird flying with constant velocity

Pre-test Bird Displacement	Post-test Bird Displacement				Total
	Incrs.	Constant	Decrs.	Other	
Increasing	1	4	1	6	12
Constant	2	85	6	21	114
Decreasing	3	31	16	15	65
Other	5	42	21	24	92
Total	11	162	44	66	283

In bird flight case we observe higher tendency to concentrate on the expected choice. 162 students which are more than half of the total group marked the expected displacement pattern for the bird's motion. They seem to have perceived the constant velocity. But there is still a great deal of confusion on the part of the students so far as the displacements of bird at successive time intervals during its steady flight. In some occasional talks with a few students we have learned that they consider the fatigue effect for the bird. It is of course something to be appreciated because the biological realities are as important as the physical ones. We draw the lesson that entertainment and

attraction could be a hindrance as well as help in teaching.

Table 3 presents the distribution scores before and after the speed controlled computer animation. 264 students out of 283 failed to estimate the correct displacement pattern (increasing) in the Pre-test. After having watched the computer animation at three speed levels 86 of them seemed to have grasped the right pattern. 6 students who got the answer right at the beginning lost their insight after the treatment. This is hard to explain because the expected pattern is quite a sophisticated one and there is almost no chance factor involved.

Table 3. Pre-test and Post-test scores for the displacements of the free falling apple

Displacements for free falling Apple	Post-test Score		Total
	Incorrect	Correct	
Pre-test Incorrect	178	86	264
Preset Correct	6	13	19
Total	184	99	283

Pearson Chi-square value for the Table 3 is 10,013 which indicates a frequency concentration within the cells significantly ($p < .000$) different than that expected of a random distribution. As can easily be seen the ignorance and the conceptual chaos still prevails. As a matter of fact 178 students who could not change their conception even after the speed controlled demonstration to make their perceptions better. They still cannot conceive increasing displacements per equal time intervals.

The Table 4 exhibits the distribution of the scores before and after the speed controlled computer animation for the bird flying steadily. The 169 students out of 283 failed to estimate the correct displacement pattern (constant) in the Pre-test.

Table 4. Pre-test and Post-test scores for the displacements of the bird flying with constant velocity

Displacements of bird flying with constant velocity	Post-test Score		Total
	Incorrect	Correct	
Pre-test Incorrect	92	77	169
Preset Correct	29	85	114
Total	121	162	283

After having watched the computer animation at three speed levels 77 of them seemed to have taken hold of the right pattern. 29 students who got the point right at the start lost their insight after the

reinforcing conduct. This is also very hard to explain because the expected pattern is relatively easier to perceive. There must be a powerful factor to distract many of the students. First reason which rushes in mind again is that of a living organism is not an appropriate object to animate a physical reality. Pearson Chi-Square for Table 4 is 23,391 which denotes a strong bias ($p < .001$) in frequency distribution within the cells of the cross tabulated data.

The figures within the other cells are very close to each other. More than half of the students marked the expected (constant) displacements for the bird in the Post-test. But the unawareness and the conceptual disorder still exist. As a matter of fact, 121 students, who could not have altered their conception even after the demonstration to make their perceptions better, still cannot perceive equal displacements of bird within, equal time intervals. We tested the significance of the changes between Pre-test and Post-test scores by using the Wilcoxon signed ranks test, and also with McNemar test. Results are given in Table 5.

Table 5. The comparison of Pre-test and Post-test scores for two Different types of motion

Relative Rank of Scores	Free fall	Constant Velocity
Post-test score greater than Pre-test score	86	77
Post-test score equals Pre-test score	191	177
Post-test score smaller than Pre-test score	6	29
Total	283	283
Wilcoxon signed ranks: Z	-8,341	-4,662
McNemar Chi-Square	67,837	20,840
Asymp. Sig.	,000	,000

The numbers in Table 5 shows that 86 students corrected their conceptions about the displacement of free falling apple. Also 77 students changed in positive direction so far as their perceptions about the displacements of the motion with constant velocity are concerned. There are only 6 students who somehow went in the wrong direction despite the guidance about the motion of a free falling apple. The number of deteriorated conceptions equals 29 so far as the steady flight of the bird is concerned. This is the finding of the study most difficult to explain.

For the ones who can be satisfied with the statistical significance of change “before and after”

the treatment the effect of computer animation is superb. However 191 wrong conceptions about the accelerated motion could not have been changed by the treatment. The wrong conceptions of the 177 students remained the same about the motion with constant velocity.

The correlations between Pre-test, Post-test and overall science achievement scores of students are given in Table 6. The correlation between Pre-test score and science achievement score is not significant. The other two correlations are significantly ($p < .001$) although not absolutely.

Table 6. The correlations between Science achievement, Pre-test and Post-test scores of students

		Score on Pre-test	Score on Post-test
Science Achievement	Pearson Correlation	,018	,287*
	N	281	281
Score On Pre-tests	Pearson Correlation		,231*
	N		283

* Significant at $p < 0,001$ level.

The correlational analysis implies that whatever (aptitude, motivation, interest etc.) makes up the overall scholastic achievement is still a threshold factor to be considered in instructional designs.

According to Pre-test results, among the students who do not have explicit knowledge about ‘force and motion’ topic and who didn’t study this topic in their schools, only 19 students were able to “discover” the effect of gravitation on free falling apple. Only 13 of them maintained their understanding in the Post-test as well. The science achievement scores of these 13 students is 3.93/5.

In the Pre-test, even the students who have high science grades did not take into account the gravitational effect acting on free falling object while drawing the motion of free falling apple. In the Pre-test, it is observed that many students had high tendency to mark the position of two objects as having equal displacements in equal time intervals without taking into account the gravitational force acting on free falling object.

6. Conclusions

The construct we would like to measure is “intuition” but we might have measured previous knowledge, success by intelligent guessing, chance success by random guessing etc.

Most important question in so far as validity concerned is that “are we measuring intuition or perception?” If people were as tall as Pisa tower, and the gravitational acceleration were one tenth of what it is on earth now wouldn't they have discovered gravitational acceleration earlier? Most probably they would have been able to observe it directly rather than to infer it from experiments..

The main focus of this study was to investigate if students could intuitively discover how the natural world functions without conscious attempts to learn the content, and without being exposed to explicit information, theories or formulas,. Although we have observed a significant improvement to realize the objectives of the study the students could not have achieved mastery in learning. The more the instruction gets individualized the higher the achievement will be.

In this study before the formal representations of abstract concepts the students can intuitively construct their own knowledge about how the natural world functions. Fostering the ability of students to predict qualitatively the behavior of phenomena under investigation is a constructive method for teaching them how to manipulate quantitative formulas [18]. Students may use their experiences gained from computer simulations to construct more accurate mental models and to form a bridge between real-world phenomena and scientific formalisms.

However, we should note that educational media is not an alternative to the whole instructional system . There are many other components and characteristics of instructional system which are to be carefully designed and controlled [19].

7. Acknowledgement

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What is “headmastering” at a small school with composite classes about?

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Abstract

Managing a small school with composite classes which often disposes of the school principal and one or two teachers is a diversified and sometimes an adventurous and definitely an eventful process. The following lines cover the topic in a narrower sense; the area of interest being outlined here consists above all in distinguishing the single time filling up activities encountered upon the process of school management, familiarization of the topic of priorities upon a realization of the stated activities and the offer of possible explanations of the current situation. The findings draw on a questionnaire survey realized in March 2008 within the research project “Small schools with composite classes in the Czech Republic: their development and growth potentials”.

1. What would we like to know?

The paper deals with single aspects of being a school principal at a small school with composite classes. In the Czech Republic, small schools with composite classes constitute a considerable part of the educational system at the level of primary education (ISCED 1), even though it is often the case of small village schools with a low number of pupils. In a relatively short period of time, the schools in the Czech Republic have been urged to cope with the requirements brought about by the proceeding education reform. The principal change was the acquisition of juridical subjectivity and the elaboration of own school educational programme². The former has meant a relatively substantial devolution of responsibility and administration towards the school principals, the latter has

¹ This project has been realized for the third time in three years by the Department of Educational Sciences at the Faculty of Arts, Masaryk University in Brno (Czech Republic). Besides the author of this paper the team of solvers also includes PhDr. Dana Knotová, Ph. D. and Mgr. Kateřina Trnková, Ph. D.

² School educational programmes for small schools with composite classes were elaborated according to the General educational programme for primary education. Available from < http://www.vuppraha.cz/soubory/RVPZV_2007-07.pdf > [online] [cit. 20.6.2009].

represented the coverage and command of a completely new area of pedagogical activity predominantly for the school teachers. Nevertheless the schools which managed to withstand the economic political pressures and demographic impacts make up a significant group of educational facilities whose contribution is not often fully recognized and the same can be said about the provision of their operation, i.e. human resources that stand behind the everyday work of small schools with composite classes. Apart from the school teachers and operating workers it is the question of headmasters/headmistresses of these schools who carry the burden of school functioning on their shoulders. By means of an interpretation of selected items in the questionnaire³ it is possible to partially decipher where the core of management of a small school with composite classes lies, what the work of a school principal managing a small school with composite classes encompasses, what they do because they have to and what they would like to do best and why?

2. Educational process or paperwork?

The paper presents chosen data obtained in a questionnaire survey realized among the school principals of small schools with composite classes in the Czech Republic⁴, the sample size having been N=537 of small schools with composite classes (35%). The questionnaire was distributed over by post to the school principals of small schools with composite classes and to the deputies of their founders. The method used then was a discriminative enquiry [3], where there were two versions of the questionnaire created for the two above mentioned target groups in such a way, so that a part of the data could be compared within these two groups of respondents. In this paper I am going to consider

³ The questionnaire was analysed with the aid of Statistics software.

⁴ For a small school with composite classes it is characteristic that it does not have an independent class formed for each grade, but in some of the classes the children of two or more grades are taught together. These schools make up 38% of all primary schools in the Czech Republic.

only the answers of the small schools with composite classes' principals. Already the wide range of the so-called functions of school signals to us that to manage an organization of such a nature is by no means a simple matter. This begs a lot of questions that can contribute to increased familiarity with the activities and processes connected with the management of a small school with composite classes. The main information follows from the question *What is included in the activities and processes executed by the headmasters and headmistresses during the school management?*

We learn that all the given activities can be assigned to the following categories: planning, organizing, pedagogical process, leadership, paperwork, communication, economic agenda, administration and operation, school development. The most often represented categories are the following (respectively): paperwork, economic agenda and communication. Activities related to the management of pedagogical process were also represented quite often. This state of things presents the headmasters/headmistresses rather as clerks than managers. This corresponds with the pointed out weak point in the management of small schools, with the insufficient support of human resources in the area of administrative work and economic agenda (comp. [1]). This activity is very time-consuming for the school principal. We have tried to reveal the background of this "disbalance" behind the management of small schools with composite classes by means of revealing the priorities. We were interested in what the headmasters/headmistresses prefer and why, and what they consider as crucial for the whole functioning of a school. However, it concerns priorities that are set on one hand (officially prescribed by binding documents issued by The Ministry of Education, Youth and Sport of the Czech Republic), on the other hand being strongly influenced by personality characteristics and by the values advocated by individual headmasters/headmistresses. We actually witness here the interlinking of personal approach to the profession and own visions with an ability and dexterity to fit it all within delimited boards and not to lose sight of the direction that "their" (as they often speak or write about the school they work in) school is heading for. Therefore we have asked them: *How would you like to view the priorities of your job and how are actually forced to perceive them (according to regulations, law and other circumstances)?*

⁵ According to [2] a school has several functions: overall development of an individual, protective facility – warranty of healthy and favourable environment, educating the pupils towards cultural and social values, shaping one's personality; the school is a tool of state policy, part of the environment. Other possible classification stated: the function of personalization, qualification, socialization and integration.

N=537 v %	plannig	organizing	edu. process	leadership	paperwork
Forced priority	12,3	15,1	46,4	28,8	69
Wished priority	21,0	27,5	67,8	40,0	40,6

N=537 v %	communication	economics	administration and operation	development
Forced priority	26,6	57,2	24,6	3,7
Wished priority	37,4	44,5	20,8	10,8

Table 1. Forced and wished priorities according to the headmasters/headmistresses of small schools with composite classes.

We assume that the values given in the Table 1 testify on one hand of the shape that school management takes in practice, on the other hand provide a feedback on what the schools have gained by the acquisition of juridical subjectivity and the implementation of school educational programmes. As for the first case we have proved that administrative works and dealing with economic agenda literally displaces other aspects of the management, predominantly because of great allocation of time they require and also the dependence of administrative and legal tasks on the person of the school principal. Common practice testifies of the fact that by the acquisition of juridical subjectivity the schools have gained unprecedented freedom, which is however redeemed by still increasing administrative works of so-called monitoring but rather of control nature, demanding economic agenda and literally groping in the flood of legislative regulations. This condition is sketched in by the statements that the respondents alleged as an explanation of the reason for the clash between the wished and forced priorities. The most often stated reason has been the overburden of the school principal which has been specified as the absence of a secretary, lots of duties, impossibility to delegate tasks in a team, everything depends just the on the school principal. A strong reason has also been seen in the school system itself, in the lack of money for education and in the bond of dependence on the founder of the school.

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Straddling the Theory/Practice Divide: A Principal's Perspective on Invitational Leadership

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Abstract

This paper's autoethnographic approach to the study of school leadership is intended to explore the tensions between theory and practice as I straddle this divide as a practicing school principal and academic. While the congruence between theoretical concepts and professional application may not always appear obvious, reflections on my application of the theory of invitational leadership in my first year at the helm of a 400 student elementary school highlights the importance of this connection as theory influences practice and practice, in turn, influences theory.

1. Introduction

When I pulled up in front of the school for the first time and eased into the reserved Principal's parking spot a few meters away from the front entrance of the building, I decided immediately that the reserved sign would have to go. I sat gazing at the school which was now, for better or worse, subject to my leadership. I had visited with the outgoing Principal in the spring and was introduced to the staff, but it was sitting in the driver's seat of a car filled with cardboard boxes that the gravity of my new role finally settled in. I had decided that I was not going to step into the role and simply see what happened. I would instead be intentional in my approach of creating an inviting school.

I was 33 years old when I pulled into the parking lot and began my tenure as principal. In 2005 the Ontario Principal's Council Leadership Study reported that the average age of elementary school principals in Ontario was 47.3 years of age [20]. I understood that I would not only have to deal with the immense responsibilities inherent in the role, but also with the reality that I was at least 10 years younger than any colleague and 14 younger than the provincial average.

This age gap affected my preparation for the position in the knowledge that public perception would likely raise a collective eyebrow at my age in relation to the role. As a vice-principal I often received the comment "You don't look like a vice-principal..." and recognized that an archetype of a school principal perhaps does exist. I wondered

what a principal was supposed to look like if it was not me.

Not only was my actual age significantly younger than colleagues but I am often told that I look even younger. This affected my self-perception as I began my tenure and influenced my decision to approach the year intentionally from an inviting leadership stance. I recognized my ability to lead and the faith the board had shown by promoting me and understood that I possessed leadership qualities that was contingent on my communication, relationships, faith, optimism, respect, and genuine care for staff and students. However, despite this recognition, I feared that "charm" played a role in my promotion to a certain degree and that because of my obvious age, I would be "found out" as a leader wanting. The turning point for my approach to leadership came as I read *Inviting School Success* by Purkey & Novak, *Inviting Educational Leadership* by Novak, and *Creating Inviting Schools* by Novak, Rocco, & DiBiase which explained the theory of invitational leadership. I recognized the congruence between inviting leadership and my own approach in many ways except one. I was missing the aspect of intentionality. I decided that I needed something solid to hold on to which would inform my decisions and practice. I wanted to have a clear direction which would be obvious to all and an approach to leadership which I could defend. I understood the tensions that would inevitably occur in the role and reveled in the opportunity to be intentional, considerate, and reflective of my practice in an on-going way. I embraced the invitational theory of practice for these reasons and began my tenure prepared to make decisions, reflect and refine.

2. Literature review

Though the transition into formal leadership presents significant challenges for many new principals, the consideration of theory and intentional application can provide support for emerging school leaders.

2.1 Socialization and shock

The transition to the role of principal is fraught with stress, isolation, role anxiety, and culture shock

as a principal embraces not only instructional leadership, but concurrently managerial, administrative, financial, and supervisory responsibilities [11][12]. Principals are expected to enter the profession adequately prepared to perform all roles and duties competently in order to support student learning and positively influence school culture and administration. The reality is that many principals are overwhelmed by the position as they struggle with their new role identity [2]. Many principals confess to feeling unprepared for the level of expertise required for mediation, difficult parents, teacher supervision, site and facilities management, administrative tasks, and the time and toll taken on families in the role [21]. As I sat in the parking spot reserved for me, I contemplated if I was ready to take on the responsibility.

I had participated in the preparation programs meant to equip me with the theory and skills required for the position. The general consensus from practicing principals is that these programs, while regarded as necessary, fail to adequately prepare emerging principals for the realities of the role [7]. Practitioners and scholars advocate for on-going mentorship to support transitioning principals with their socialization and competency [3][4][6].

The gravity of being in charge settled in my stomach that August day as I prepared to put theory into practice. I was committed to invitational leadership and intended to begin immediately.

2.2 Theory of practice

The application of theory may not be at the forefront of many new principal's minds as they begin their tenure as academic leaders. In fact, a perception exists of a gap between theory and practice within education [9]. While education scholars engage in research in order to influence practice through the application of theory, there is little tangible evidence to indicate that these endeavors actually result in change for teachers in the classroom [9]. Though theories about why this gap exists and how to lessen it to bring the world of academia and practitioners closer together, the perceived chasm persists [9]. The language of research is cited as providing a barrier to the dissemination of research to practitioners while a shift in presentation of theory from academic language to that of conversation is suggested as an example of lessening the distance between scholars and teachers [5]. Though this assertion appears deeming to practitioners, further studies reveal that academics and practitioners read very different professional journals.

The reading preferences of scholars and practitioners vary significantly as scholars prefer peer-reviewed journals and practitioners prefer non-peer reviewed magazines focused on practice and

regulations [22]. Despite this perception of a gap between theory and practice, I found myself re-immersed in theory as an academic and a practitioner, reflecting on practice and valuing experience as education.

2.3 Pragmatism in practice

Inviting leadership is Dewey-ian in its approach. Dealing with experiences is meant to make experiences better. Concepts must be applicable to action as reality itself is only a result of actually doing something. Dewey refers to this interaction between the organism and the environment as 'transactional realism' [8]. Without transaction, philosophy is reduced to merely theoretical. It is the process of inquiry that should shape our concept of being [8].

The domain of knowledge and action are not separate, according to pragmatism, but are intimately connected as knowledge emerges from action. In this regard, Dewey would argue that experience is the key to knowledge as experience is the philosophy of action.

For pragmatism, educational inquiry is both the beginning and end: it provides the source of the problems while also providing the final "test of value" [1]. Ultimately, the purpose of educational inquiry is to make the actions of the educator more intelligent. Educational research should not be "on" or "for" educators, but needs to actively include educators in a meaningful way in order to be valid and achieve desired goals.

As an educational practitioner, by doing, I am strengthening my theoretical epistemology while theory informs my practice. Ultimately, knowledge and truth are not created but possibilities are which open more possibilities. Our understanding of research does not tell us what to do but instead provides options for the future. Pragmatism regards knowledge as a function of human action therefore research and practice must inform each other in a continuous way.

Influenced by the theory of invitational leadership, I began to consider theories 'of' practice rather than theory 'for' practice. I became convinced that invitational leadership would make a positive impact on the school and was determined to put the theory into practice.

3. Method and results

Based on the concept of 'inviting' others to participate in the leadership of the school, invitational leaders foster a culture of open collegial collaboration accomplished through trust, optimism, respect, and intentionality. I dedicated myself to finding out more about the tenants of the theory of inviting educational leadership.

3.1 Invitational leadership

According to invitational leadership theory, effective leadership is one that invites others to utilize their talents to contribute to the betterment of the organization.

Theory is a way of thinking and practice is that which is worth doing. A theory of practice is thinking about the value of action, being intentional and reflective before, during, and after. Inviting leaders recognize the gifts and talents that others bring to the table and trusts in their ability to contribute to the school. Invitational leaders invite others and work collaboratively with their heart, heads, and hands [13].

As an emerging educational leader, I had respected and encouraged the talents of others and appreciated the collaborative nature of our vocation but recognized my leadership was missing intentionality. I had been given opportunities to lead and would consider myself to be an optimistic, caring, and trusting person by nature, but it was not until I became intentional about my decisions and my practice that I could embrace invitational leadership. I became cognizant of decisions and considerate of the implications of policies, procedures, and programs while reflecting more on practice. Being intentional about my practice required on-going reflection and refinement as Donald Schon details in "The Reflective Practitioner".

Leadership is an art and we have the responsibility for moral action that influences the lives of people [18]. In order to lead invitationally, a leader must respect others, foster trust between people, care for the process of leading, be optimistic that better futures are possible, and be intentional in the process of leading. The way in which this is manifest in school leadership is revealed in the five "Ps": places, policies, people, programmes, and processes.

While the tenants of trust, respect, optimism, care and intentionality as revealed in places, policies, people, programmes, and processes may seem wonderful in theory and on the page, what does it look like in practice? Presented with the unique opportunity of beginning my tenure as principal, I made the decision to attempt to implement to the theories of invitational leadership in my school.

3.2 Places

I began with the physical building by asking the custodian to remove the reserved parking sign. When teachers began to arrive the missing sign was noticed immediately. I told staff why I had removed the sign and invited them to join me by parking in the back. I did not mandate it, suggesting that if there was a reason for them to continue parking in the front then to continue to do so, but by leading by

example, staff willingly volunteered parking spots in front of the school to provide more for visitors.

As a vice-principal, I had spent one year between two schools and a year at another school. In those three offices I occupied, I inherited the space from my predecessor and left it unchanged. In each configuration, there was a desk in the middle of the room which I sat behind. I was cognizant of the power structure that it created in the room and the dynamic that each visitor would experience upon entering the office as I sat behind the desk and invited them to sit on the other side. Though the physical set up of the office was not congruent with my leadership style, my lack of confidence and my own perception of competence influenced me to leave it in all three schools the same way. As I prepared for my new role as principal, I began to recognize that I had left each office intentionally uninviting because of my insecurity in regards to the perception of my competency as a result of my age. Though I did not enjoy the power dynamic that each office offered, I perceived that it afforded me a degree of authority. As I transitioned into the principal role, I was determined to embrace an inviting approach entirely which included the careful consideration of the physical space.

My predecessor sat behind a large desk as visitors entered the office to sit in two chairs on the other side of the desk. The walls were lined with large black filing cabinets and bookshelves which forced visitors to turn sideways to enter the room and sit down. I removed two of the filing cabinets and one of the two desks and pushed the desk up against the wall. An inviting office would not present a desk as a barrier to interaction and a symbol of power. I wanted to be able to work at my desk and simply turn to face any visitors with my body open and inviting to conversation and relationships. The removal of the filing cabinets created space for a small circular table and two chairs which I pushed into the corner for conversations and intimate conferences.

I filled the room with books to lend to staff, students, or parents from classic literature to philosophy, comic books to biographies of Roy Keane and George Best. Paintings which were gifts from parents at former schools and art work from my young daughter were hung on the wall along with my degrees, and photos of my family to reveal my priorities. Lastly, I cleared large cork board wall of all paper with phone numbers, schedules, and administrative information to create a blank canvass on which I would place student work.

I walked the hallways and took note of the signs within the school. Signs that professed our school to be an allergen-free environment by saying "stop!" on a red stop sign were re-created to thank everyone for contributing to the creation of a safe learning environment for all students. The stop sign at the

front door of the school which indicated that the school doors are locked throughout the day for security reasons was turned into a welcome note that invited visitors to press the button to reach our secretary and be welcomed in the school at the office.

The changes, though small, were noticed, and sent the message that my leadership intended to be inviting, open, and collaborative.

3.3 Policies

I discovered that the simple act of leaving my door open to be a strong indicator of invitational leadership. With the layout of my office open for visitors, my door remains open and inviting. The staff and parents appreciated access for questions and concerns, and my priorities became obvious.

At the first staff meeting of the year, I asked for teachers to send students to the office for doing 'good things'. Random acts of kindness or displays of thoughtful, caring behavior were to be applauded and recognized by me in the office. I asked for students who were steadily improving, scored highly on a test, or had completed a project they were particularly proud of. This policy took both the staff and students a while to get used to as the principal's office had long been considered a destination for students requiring discipline or poor effort. I was delighted as students came to my office with poems they had written to read to me, a test to share, or a story about how they were caught doing something special for others in the school. Students were delighted to be recognized and the principal's office started to become demystified from traditional perceptions of discipline and fear – perceptions which I have found to be ever-present still, despite an invitational approach. This perception turned from a scary place to go to a place where scholarship and citizenship are celebrated. I began to place students' work onto my large corkboard as they came down to the office to share. The board was filled quickly with evidence of student success and pride.

School policies continue to reflect the consideration of the best interests of the students. When that priority and policy is clear to all community members, decisions, even potentially unpopular ones, are accepted and respected quickly.

3.4 People

When I walked into the school for the first time that August morning, I was feeling overwhelmed and underprepared to take on the leadership of the school and didn't pretend otherwise. I sat down with the school's secretary who over twenty five years had seen many principals come and go. I listened to her opinions, ideas, and observations. I did the same

with the custodian. At the August staff meeting, I asked each staff member to make an appointment with me before the October long weekend for a one on one conversation for an hour or so to talk about them: their career, future plans, impressions and opinions of the school, family life, talents, and expertise. I found out so many interesting and wonderful things about each unique staff member both personally and professionally which helped me to understand more about each individual and the school as a whole.

I met with the school Council Chair to get his input and feedback on the school and community, and began to develop a partnership with the community. I asked questions, listened, and found out more about our unique school and greater community than I had ever imagined.

As an invitational leader, I made it my priority to remember everyone's name and learn a little about them. As the year progressed, I was intentional about meeting every student and parent I could, and prided myself on knowing every student in the school; their siblings, parents, and some background, by the end of the year. The building itself is not what makes the school but rather it is the people within. Investing in the relationships within the building through the simple act of knowing each individual is an extremely powerful statement.

Daily routines reveal people-centric practices. The practice I feel has made the largest impact on the community is my morning and evening routines at the bus drop off and the 'kiss and ride' at the side of the school. Every morning, I greet the buses as they arrive and drop off students each day. A personal 'good morning' to each student as they exit the bus and walk toward the yard is usually one of the highlights of my day. From the buses, I walk to the side of the school for the kiss and ride car drop off. I open each car door, and wish everyone a good morning. Usually this means the traffic moves quickly and efficiently, students arrive safely, and they are greeted with a warm welcome.

Staff appreciated the active engagement in student safety and supervision. Parents quickly grew to love this morning ritual as it made drop off quicker and safer while allowing me to stay in touch with parents each day to say hello, or to quickly follow up on any situations or conversations. I remain convinced that this practice continues to lessen the number of phone calls and meetings throughout the day while setting a positive example of an inviting and welcoming school.

At the end of the day, being outside for bus duty to similarly welcome parents for pick up, assist students to their buses efficiently and safely, and direct traffic for ease and safety for both buses and cars reveals my accessibility, priorities, and open leadership.

Daily routines include classroom visits and yard duty for supervision. Not only does this allow for

more visibility around the school, but it affords a greater understanding of the school, staff, and students. It is easy to profess priorities, but I continue to find that practices reveal priorities. Time is so precious to a school principal and when the regular practice is so open, inviting, and engaged, the priorities of the inviting leader are even more obvious.

3.5 Processes

I invited staff to submit their ideas for what they thought worked well in the school, what they would like to begin, and anything they would like to start. This simple process of seeking their input valued their immense knowledge of the school and signaled a more collaborative approach to processes within the school.

I found out that the staff and students were not happy with the school crest as it had existed for many years and were interested in moving in a new direction. I invited the entire school community to submit their ideas for a new school crest.

Submissions arrived from the Kindergarten students up to the Grade 8s. By the time the submissions were all in, more than 80% of the school's population participated in the process.

We took every submission, mounted it, and displayed them around the school as a school crest art show. Students enjoyed seeing their work mounted while everyone carefully considered and discussed the unique entries.

In the end, the many crests were narrowed down to three which were then taken and combined to make up what is now our new school crest. Those original three submissions, along with an explanation of the project, how they were chosen, what they represent, and the new crest that resulted now hangs in the front hallway as a remembrance of their work and of our collective contributions to change and community. Our school crest project engaged the entire community in the contribution and decision making process which resulted in the new public symbol of our school. Not only was it a wonderful exercise in collective creativity, but it also highlighted our commitment to inviting ideas and collaborative contributions to the community.

3.6 Programs

I intended to make social justice a priority within the school so that our students could recognize the responsibility they have to serve others and how it can be done in any measure, large or small. The Council Chair and I began by introducing the students to Bethany Kids Pediatric Hospital in Kijabe, Kenya which provides free surgeries and medical care to children from across East Africa.

The project was simple: students were encouraged to give only their own money which they had earned themselves through chores, allowances, or any other creative way in which they could earn money for themselves. They were given a specific timeline for the project, but no financial goals were stated. We similarly encouraged parents to match their children's contribution penny for penny in the spirit of community.

Students began to talk about how they were giving away portions of their allowance while others suggested extra chores around the house. Grade 4 students hosted a cupcake sale on their front lawn to earn money to give away while Grade 5s took advantage of the cold early March temperatures to host a hot chocolate sale. Other Grade 5 students purchased pizza and set up a stand in front of the local high school selling to their teenage customers. A class organized a crazy hair day for a dollar a student. Teachers actively encouraged and lead by example while parents contributed by hosting jewelry sales and individual contributions.

When this project was initiated we had hoped to bring the community together, united in a common ethical goal. We intended to inspire students to place the needs of others before their own and plant the seeds of philanthropy. Sometimes when we take on projects like this we only recognize the impact through a retrospective lens however, we would not have to wait that long.

I received a phone call during the last week of the project from a parent informing me that her son's birthday was on the weekend and that he had invited all of the students in both Grade 6 classes to his party. In lieu of traditional birthday gifts, he had asked instead for contributions for Bethany. When Monday morning rolled around, he walked into my office and personally handed me over \$500. Similarly, a Grade 2 student hosted a birthday party with a similar request from her attendees. I was moved beyond words.

Everyone in the school rallied together in pursuit of a common moral purpose and in the process contributed to the community and positive school culture.

4. Conclusion

The transition into a position of such immense responsibility as a school principal is a difficult one. A new leader moves from being overwhelmed to coping to a level of competency eventually acquiring expertise and self efficacy. Many scholars write about these stages as rites of passage for emerging leaders [15][16].

Invitational leadership provided a theory of practice, respecting the contributions of experience and reality rather than suggesting prescriptive approaches to leadership which connected with my

philosophical inclinations and leadership aspirations. For Dewey, experience is the process of undergoing something, and being reflective and considerate of how to improve for future practice. There is a self-correcting component of this approach to practice as I embraced Michael Fullan's "ready, fire, aim" [10] philosophy. I committed to living in an idea and invited others to live intentionally within the school by doing things on purpose for purposes that we could defend. These reflections are not intended to suggest "successful" leadership. They simply reveal the real impact and applicability of the theory of invitational leadership in contemporary schools as evidence of the intentional bridging of the knowledge gap and the evaluation of considerate educational leadership grounded concurrently in theory and practice.

The implementation of invitational leadership continues to make a profound impact on my practice as a school principal. By intentionally caring, respecting, trusting, and being optimistic, my experiences continue to shape my decision making and ultimately, my leadership as theory influences practice and practice influences theory.

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Access to Academic Advising and Counselling of Undergraduate Students in South East Universities in Nigeria

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Abstract

This study investigated the extent to which students have access to academic advising and counselling in South East Universities in Nigeria. The subjects for the study comprise 10,800 students drawn from the nine universities in the South East, Nigeria. The instrument was validated by two experts in Guidance and Counselling one from Nnamdi Azikiwe University, Awka and another one from Ebonyi State University, Abakiliki all in Nigeria. A test-retest method of reliability was used and a reliability co-efficient of 0.83 was obtained. Mean scores and z- test statistics were used in data analysis. The result included that there is no significant impact of academic advising and counselling services from six out of nine universities studied. Based on the findings of the study, it was recommended that Government should provide counseling centers in all the Universities to avail the students of academic advising and counselling for better academic performance amongst others

1. Introduction

Academic advising and counselling is a programme that has been designed to help the individual attain a total development. If the individual is not properly guided he/she may not be able to take better decision later in life, hence the researchers deem it necessary to investigate the accessibility of academic advising and counselling among university undergraduate students in South East, Nigeria. Today many countries including Nigeria face significant new challenges in the university environment such as development in ICT, access to academic advising and counselling and the demands of global knowledge economy. These give rise to

both opportunities and threats in university education, consequently the new challenges. However the goals of university education in Nigeria as stipulated in the National Policy on education, NPE 2004 include to:

- Contribute to national development through high level relevant manpower training.
- Develop and inculcate proper values for the survival of the individual and society.
- Develop the intellectual capability of individuals to understand and appreciate their local and external environments.
- Acquire both physical and intellectual skills which will enable individuals to be self reliant and useful members of the society.
- Promote and encourage scholarship and community service.
- Forge and cement national unity.
- Promote national and international understanding and interaction (federal Republic of Nigeria FRN [3].

Looking at the above goals, none can be achieved without proper academic advising and counselling. House and Martin [6] defined academic advising as a profession focused on offering constructive counselling and guidance to students in order to assist them in meeting academic goals. Also for Omeje, [10] and Stone and Dahir, [12] counselling is a service concerned with creating opportunities and awareness for personal/social, educational and vocational growth of the individual which can be used in national and international development. Marrying the two definitions above academic advising and counselling is ideally an implementation of a data – driven, evidence – based and comprehensive school counselling program that promotes and enhances students achievement, career and

college readiness, personal and social competencies at the primary, post primary and tertiary levels (Dimmitt, Carey & Hatch [2] , Holcomb-McCoy [4] and ASCA [1].

Moreso, academic advising and counselling offers assistance in evaluating skills and talents, advising students in the selection of course and academic programmes which seek to help students combine those abilities with his/her likes and dislikes (Portman,[11], develop a plan of action in the pursuit of education goals that will produce the desired outcomes, and curb maladjustments found among students (Holcomb-McCoy&Chem-Hayes,[5]. It is for the above reason that FRN [3] stipulated that counselling services should be made accessible to the students of universities in Nigeria. Unfortunately, like most aspects of the policy, the academic advising and counselling did not only run short of many needed ingredients but also has the problem of implementation. In spite of the fact that the curriculum conference of 1969 indicated that the absence of counselling was a missing link in our policy for which the national policy quickly addressed in 1977 and modified in 1981, 1998, and 2004, the policy according to Ifelunni [7] is still very defective. In the south east universities of Nigeria Okeke and Okorie,[9] asserted that lack of adequate functioning of the counselling centre where the academic advising and counseling takes place may be responsible for inappropriate decision and maladjustment behaviour of students and poor performance among others. Also Offor [8] observed that the academic advising and counseling centres in most of the Nigerian Universities exists only on paper. The problem of this study is therefore to find out if the academic advising and counselling office actually exist and if it does, is it accessible to the university students in the South East, Nigeria? The purpose of the study is to find out if students in south east universities in Nigeria have access to academic advising and counselling.

The study is guided by one research question

1. To what extent do students of South East, Nigeria have access to academic advising and counselling?

Two null hypotheses were tested at the 0.05 level of significance, these are:

1. There is no significant difference between the mean scores of students based on gender.
2. There is no significant difference between the mean scores of students based on school type.

2. Method

The design of the study was survey. The study was carried out in the south east universities of Nigeria. A total of nine (9) universities namely, Nnamdi Azikiwe University (UNIZIK), Awka. Anambra State University (ASUU), Uli. University of Nigeria (UNN), Nsukka. Enugu State University (ENSU), Enugu. Ebonyi state university (EBSU), Abakaliki. Imo State University (IMSU),Owerri. Federal University OF Science and Technology (FUTO)Owerri. Abia State University (ABSU), Uturu and Umudike University of Agriculture (UUAU), Umuahia. All the students in all the universities constituted the population. Proportionate stratified sampling technique was used to select 10,800 students from the nine Universities. The instrument was a structured questionnaire developed by the researchers. The instrument was validated by 3 experts in guidance and counseling and measurement and evaluation. The instrument was analyzed using the Cronbach's Alpha procedure. The reliability analysis yielded Cronbach's Alpha value of 0.83. The instrument was therefore deemed reliable for the study. The researchers adopted a direct approach in the administration of the instrument to the respondents. By this method, copies of the instrument were taken to respondents' universities and administered personally with the help of 18 research assistants who were duly oriented. The direct approach facilitated instant collection. The data collected in respect of the research question was analyzed using mean while the hypothesis was tested using z-test statistics at 0.05 level of significance.

3. Results

The results of the study are presented below. Table 1 shows that students from 3 universities have access to academic advising and counseling, while students from 6 universities do not have access to academic advising and counseling. From the data it shows that only some of the state schools have access to academic advising and counselling.

Table 1. Respondents' mean scores for the extent of access to academic advising and counseling

University	Students No	Mean
UNIZIK, Awka.	1,500	1.20
ASUU, Uli.	1,200	2.90
UNN, Nsukka.	1,400	1.70
ENSU, Enugu.	1,200	2.10
IMSU, Owerri.	1,200	3.15
FUTO, Owerri.	1,300	1.72
ABSU, Uturu.	1,000	2.20
UCAU, Umuahia	1,000	1.61
EBSU, Abakaliki	1,000	2.80

Table 2. Z-test summary for significant difference of the mean scores of male and female students on access to academic advising counseling

Variable	Mean	SD	Z-cal	Z-critical	P
Male Students	2.10	1.32	0.81	1.96	0.05
Female Students	2.20	1.14			

Results in Table 2 indicate that the male students obtained a mean of 2.1 with a standard deviation of 1.32 while the female obtained a mean of 2.2 with a standard deviation of 1.14. It can be observed that Z value 0.81 at 0.05 level of significance is less than the table z-value of 1.96, therefore the hypothesis is accepted indicating that there is no significant difference in the respondents mean scores due to gender.

Table 3. Z-test summary for significant difference of the mean scores of federal and state students on access to academic advising and counselling

Variable	Mean	SD	Z-cal	Z-critical	P
State Students	2.73	0.52	2.06	1.96	0.05
Federal Students	1.74	0.96			

Results in Table 3 reveal that at 5 percent level of significance, the calculated Z-value of 2.06 is more than the critical Z-value of 1.96, the hypothesis is rejected. Therefore the hypothesis is significant.

4. Discussion

Findings from the study revealed that out of nine university students studied, have never seen the structure of university counseling centre how much more having access to the counselors from the centre to counsel them in their areas of need. This however confirms the assertion of Ifelunni [7] and Okeke and Okorie [9] who earlier asserted that lack of academic advising and counselling is responsible for inappropriate decision of students amongst other factors. The study further reveals no significant difference between the mean scores of students due to gender. This is because in the university system there is no gender discrimination. The implication is that students generally are matured and are able to take decisions on issues that concern them. Also their reasoning depends on their individual intelligence, environment and exposure in life. Moreso in this era of ICT the students are exposed to the same experience irrespective of sex. The study also revealed a significant difference between the mean scores of students based on school type. The implication of the above result of study is that some of the state Universities have already implemented while others are yet to implement theirs but surprising the federal universities have not started implementing the national policy on establishment of counseling centre as stipulated in (FRN [3]). This lack of implementation may be due to frequent changes in government or liaise affair attitude of our leaders who do not follow up policies due to or lack of proper orientation on the usefulness of these counselling centre.

5. Recommendation

Based on the findings, the following recommendations were made:

1. It is recommended that the government should set up new committee to see that the policy of establishing counselling centres in all universities in Nigeria is implemented.
2. The government should give the Guidance Counseling department of every university free hand to bring in a full time professional counselors to run the counselling centres for maximum results amongst students.
3. The Guidance and Counseling department of the universities should mount awareness campaign for the students to visit the counselling centres.

4. The professional counselors should introduce the counselling centres to students always especially during orientation of new students.

6. Conclusion

In conclusion, it was discovered that university students in south east of Nigeria have no access to academic advising and counseling. Gender and school type were not statistically found to be significant in terms of academic advising and counseling amongst students in south east universities in Nigeria. Based on the above the implications of the findings and recommendations were proffered.

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School Personnel Participation in the Administration of Educational Institution: an Empirical Study in Liepaja City (Latvia) Comprehensive Schools

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Abstract

The successful management of the processes of economic change requires a new management approach, a new management philosophy and a paradigm change in thinking, thus the article views the issue of the performance of the team work and personnel participation in the achievement of the school's strategic aims. The empirical research data on school personnel participation, cooperation, communication, mutual trust and school culture of Liepaja city comprehensive schools has been analyzed in the context of this aspect, with particular attention being paid to the school personnel interpersonal relationship issue. The study involved personnel of Liepaja (Latvia) comprehensive schools, together 460 people. The results of the research reveal a high school culture index of the schools involved in the study, however, there are significant differences in views of school personnel on mutual cooperation at school. The study also found the connection between the indices of school personnel interpersonal relations and the index of the school personnel participation in school administration.

1. Introduction

The economic situation in Latvia and the world, reform of regions in Latvia and the declining number of students in the context of the increasing amount of information and knowledge, puts forward high demands for Latvian educational institutions that are characterized by competitiveness and the ability to integrate innovatively into the surrounding environment and is targeted towards the realization of sustainable development. Sustainable development of education during the change processes in all European Union Member States is regarded as one of the highest political goals. This goal requires such school

management approach which, in result of successful implementation, leads to the establishment of the environment that encourages formation of a unified school personnel future vision on the work of the educational institution.

In today`s complex and dynamic world a single person or a couple of persons cannot manage everything. No leader, institution or nation can exist or lead without the support or involvement of others; the same applies to education as well. [2] Management activities should not be placed in one individual's hands, but rather the contrary - they should be shared both by teams and employees. [1] According to Goleman [3] this means that any person in one way or other would act as a leader.

School personnel involvement in the management of educational institutions requires a management approach based on trust, cooperation, communication and cultural development and improvement, which in turn implies changes in the school strategy, culture, tasks and work organization. [2] The above mentioned points show the need to build a school environment that focuses on constructive debates, differences of views, goal and task interactions. [4; 5; 6] Already twenty-five years ago, Wynn and Guditus [7] found that an educational institution will gain noticeable benefit only if it is supported by a structure model which encourages maximum participation along with the appropriate cultural context which promotes collaboration.

2. Research Methodology

To determine whether the Liepaja city comprehensive school administration is directed to the school cultural environment conducive to the school personnel participation in the school administration process, as well as to find out the link among the principles of team-work, school culture and personnel interpersonal relations and the school personnel

participation in the administration of educational institution, an empirical study was conducted in Liepaja city comprehensive schools, surveying the school administration (principal and deputies), teachers and other school staff (support staff, librarians, methodologists, technical staff), totalling 460 survey respondents. The study involved 16 Liepaja city comprehensive schools: 2 elementary, 4 primary, 10 secondary schools. The study was conducted from May 2007 till January 2009, including data collection, data processing and analysis of survey results.

In order to carry out the research a questionnaire was designed in which the respondents had to assess after the Likert scale:

- *collaboration between school personnel* from the "excellent" to "unsatisfactory";
- *allegations about the involvement of school personnel in school management, communication and mutual trust* - from "completely agree" to "completely disagree";
- *interpersonal relations between the school personnel* - from the "friendly, open" to "tense, competitive" relations;
- *the importance of interpersonal relations of school personnel* - from "very important" to "not important".

The questionnaire reliability testing was done, determining the Cronbach's Alpha coefficient of the whole questionnaire. A high poll alpha coefficient ($\alpha = 0.94$) was obtained. The number of questions in the questionnaire was reduced using the index method. The indices were created by combining a number of questions along thematic groups, and compared according to the average values. The average value was determined by creating one measurement scale (from the most positive to the most negative). For each group of questions included in the index Cronbach's Alpha coefficient was determined. The indices were calculated as the average value of all the questions of thematic group which the respondents had answered. Afterwards the border values were found which led to the creation of the following indices with 3 qualities (low, medium or high index):

- *Team-work principle Indices*: School Personnel Mutual Cooperation Index (SPMCI) ($\alpha = 0.65$), the School Personnel Interpersonal Communication Index (SPICI) ($\alpha = 0.82$) and the School Personnel Mutual Trust Index (SPMTI) ($\alpha = 0.78$);
- *School Personnel Participation in school administration Index* (SPPsaI) ($\alpha = 0.71$);
- *School Culture Index* (SCI) ($\alpha = 0.78$);
- *School Personnel Interpersonal Relations Index* (SPIRI) ($\alpha = 0.77$);

- *School Personnel Interpersonal Relations Significance Index (SPIRSI)* ($\alpha = 0.83$).

To clarify the team-work principle, the personnel interpersonal relations and school culture inter-relation with the school personnel participation in the school administration Spearman's rank correlation coefficient was used because the index ranking scales are on a rank scale; besides, the empirical distribution does not match the normal distribution, because according to the Kolmogorov-Smirnov Test p value < 0.05 .

2.1. Respondent characteristics

It is self-evident that, in this study, the teachers are the most represented group of posts (81.7%), school administration, together account for 10.6% of respondents, while 7.6% are other school staff. The schools involved in the study are mostly administrated by principals between the ages of 41 to 50 years (41.7%). Teachers mainly represent the age group from 31 to 50 years (from 31 to 40 years - 27.9%, from 41 - 50 years 33.5 %), while the other school staff make the largest proportion of the age category from 51 to 60 years (31.4%). The average teaching experience for teachers / school administration and the average school staff length of service at school is 19.73 years. The average length of experience of school administration in managerial position is 9.69 years.

2.2. Analysis of research results

The summary of the created indices in Table 1 reveals that the city of Liepaja comprehensive schools have a high personnel participation in the administration of schools (SPPsaI), the personnel mutual trust (SPMTI), personnel communication (SPICI), school culture (SCI) and personnel interpersonal relations (SPIRI) index. The study also indicated high (79,5%) school personnel interpersonal relations significance index (SPIRSI). (Table 1) A diverse assessment was given about the personnel mutual cooperation. Moderate (50.5%) and high (48.6%) SPMCI were in almost equal levels. (Table 1). Taking into account the gained diverse SPMCI indicators shown in Table 1, it seemed important to ascertain whether the SPMCI is statistically significantly different in the position group of the respondents: among teachers, school staff, the school deputies and school principals. After comparing the results of four groups making use of the Kruskal Wallis Test, it can be concluded that there is a statistically significant difference in school personnel's opinions about the level of the school personnel mutual cooperation (SPMCI) at school ($p = 0.033$) (Table 2).

Table 1. Indicators of the Created Indices

Index level	low	medium	high
	Row Valid N %	Row Valid N %	Row Valid N %
SPPsal	,4%	8,6%	90,9%
SPMCI	,9%	50,5%	48,6%
SPMTI	,7%	20,0%	79,3%
SPICI	,4%	13,2%	86,3%
SCI	,0%	7,2%	92,8%
SPIRI	1,1%	15,5%	83,4%
SPIRSI	2,0%	18,5%	79,5%

In addition, it was discovered that there is also a statistically considerable difference in school personnel's opinions about the level of significance of interpersonal relations (SPIRSI) at school ($p = 0.021$). (Table 2)

After setting up SPMCI and conducting the cross tabulation of the respondent positions, it was found that the divergent views on mutual cooperation of school personnel are most evident in the teacher group (Table 3). The average (49.2%) and high (49.7 %) SPMCI are almost at equal levels, while differences in views on the significance of the school personnel interpersonal relations (SPIRSI) are evident among other school staff. (Table 3)

The results of the correlation analysis between the school personnel participation in school administration index (SPPsal) and school personnel mutual cooperation index (SPMCI), the school personnel interpersonal communication index (SPICI), the school personnel mutual trust index (SPMTI), the

school culture index (SCI) and the school personnel interpersonal relations index (SPIRI) and their significance index (SPIRSI) are shown in Table 4.

Table 2. Kruskal Wallis Test Indicators in the Group of Respondent Job Position

	Test Statistics ^{a,b}		
	Chi-	df	Asymp. Sig.
SPPsal	5,272	3	,153
SPMCI	8,752	3	,033
SPMTI	4,008	3	,261
SPICI	5,866	3	,118
SCI	3,142	3	,370
SPIRI	3,242	3	,356
SPIRSI	9,706	3	,021

a. Kruskal Wallis Test
b. Grouping Variable: Respondent Job Position

Table 3. Cross tabulation of School Personnel Interpersonal Cooperation Index, Interpersonal Relations Significance Index and Respondent Job Position

Index	Index level	Respondent Job Position			
		school pirincipal			
		teacher	school principal	deputy	school worker
		Column Valid N %	Column Valid N %	Column Valid N %	Column Valid N %
SPMCI	low	1,1%	,0%	,0%	,0%
	medium	49,2%	66,7%	38,9%	71,4%
	high	49,7%	33,3%	61,1%	28,6%
SPIRSI	low	1,9%	,0%	,0%	5,7%
	medium	21,1%	,0%	5,4%	11,4%
	high	77,1%	100,0%	94,6%	82,9%

Table 4. Interrelation between the School Personnel Participation (SPPsal) and Team-work Principles, School Culture (SCI) and School Personnel Interpersonal Relations (SPIRI)

		SPMCI	SPMTI	SPICI	SCI	SPIRI	SPIRSI
Spearman's rho	Correlation Coefficient	,239**	,369**	,523**	,532**	,259**	,274**
	Sig. (2-tailed)	,000	,000	,000	,000	,000	,000
	N	450	451	446	450	444	450
	**. Correlation is significant at the 0.01 level (2-tailed).						

The obtained correlation results show that the relationship between the school personnel participation in school administration index (SPPsaI) is essential among all the team-work principle indices, as well as school culture index (SCI) and the school personnel interpersonal relations (SPIRI) and their significance (SPIRSI) index.

The interrelations between the indices are testified by all six correlations that are statistically significant at a confidence level of 0.01. All correlations are positive, hence, the higher the cross-staff communication, cooperation, trust, interpersonal relations, relations significance and school culture index, the higher is the school personnel participation in school administration index.

3. Conclusions

Despite the high Liepaja city comprehensive school personnel interpersonal communication, trust, interpersonal relations, school culture and personnel participation in school administration index, the school personnel mutual cooperation needs the greatest improvement. This may be done by facilitating the interaction among school personnel and increasing the understanding of its necessity for school aim achievement.

The research proved that building better cooperation, communication and trust, as well as establishing better school culture, increases the level of school personnel involvement and participation in school management processes.

School personnel interpersonal relations are connected with personnel involvement and participation in school administration processes, therefore the interpersonal relations of the Liepaja city comprehensive school personnel have a significant role in the participation in major decision making, thus taking responsibility for their accomplishment. Good relations would also provide them with the chance to fulfil and assert themselves as leaders at school not only in their professional fields, but also outside them.

The process of school personnel involvement in school administration should not be based on interpersonal

relations, but on the assessment of each school staff member's knowledge, skills and willingness to invest their knowledge and skills in the development of sustainable school.

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**Session 6A: Cross-disciplinary areas of Education,
Mathematics Education, Geographical
Education, Science Education**

In what Case is it Possible to Speak about Mathematical Capability among Pre-school Children?
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In what Case is it Possible to Speak about Mathematical Capability among Pre-school Children?

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Abstract

Most of people have fatal attitude to Mathematics: some of them are capable to learn it form nature, but the others are not. So is their fate – to suffer from it for the whole of life... But it is a rude though natural mistake, as it results from means of mathematical education and its content. Most of parents and teachers are directed on these aspects both in kindergarten and at primary school. Of course, parents are different. Nevertheless so many parents can't possibly but speak about achievements of their children. Some start making their own children learn better by the example of success of the others. They make their children learn long chains of figures with no understanding. It is even more sad to see how a mom asks her 4-year old son: "How much is two plus three?" But he replies just because he learned the answer but not calculated. Not only parents but also kindergarten tutors don't want to understand that drilling for arithmetic has no sense. For a specialist it would take two days only...But teach him how to think logically – is a goal demanding from him, reached by different means.

1. Introduction

It is clear, that capability to any subject or other activity are determined by individual psycho features, genetic predisposition. Although nowadays there is no evidence to stipulation of abilities by neural issues of any kind. Moreover, it is possible to compensate even unfavourable abilities. Task-oriented approach will lead to personal growth, formation of clear-cut abilities, which is proved by certain experience.

Mathematical abilities are from a group of so called *special abilities* (e.g. musical, painting etc.). To reveal their existence certain knowledge is needed, together with certain skills, namely skill to use knowledge in mental activity.

Mental activity – the key type of mathematical activity. Realization of its results is one of the strongest stimulations for current development of the civilization.

The problem of knowledge digestion and accumulation is traditionally connected with natural figures' apprehension and operations with them: counting, adding on, arithmetic operations and comparing, changing the scalar quantities, as well as quantities with nonnegative results of change.

Many educational programs create the mathematical content with the focus on "natural numbers and operations with it". The process of mathematical ... formation is aimed at content (knowledge) and operational (skills) elements of curriculum. In other words, "certain knowledge base" is associated with knowing the natural numbers, whereas "collection of certain skills" can be understood as practical operations with numbers – counting, adding on and use of symbols (operational figures and signs), typical mathematical problem solutions etc.

Both Russian and foreign researchers associate formation and development of mathematical abilities among school children with mental processes (not with subject knowledge and skills). Talented children usually have number of specific characteristics, namely, flexibility of mind, i.e. fresh thinking and ability to various cognitive problem solving, easy transfer from one problem to another, ability to come out of usual activity and find new solutions under changing conditions. Such peculiarities of mind are directly depending on specific memory organization as well as on imagination and perception.

Researchers point out also such characteristics as *deepness of thinking*. By this they mean ability to penetrate into essence of each fact and event, observe their interconnections with other facts and events, uncover specific, implicit characteristics of the learned material.

Among major characteristics in mathematical thinking there is *task-oriented thinking* in combination with its *breadth*, i.e. ability to formulate general ways of thinking, skills of team vision of a problem.

Prior to all other categories mentioned above, specific or natural aptitude to structural approach to a problem and maximum stability, concentration and amount of attention.

Mathematical abilities are closely connected with cognitive abilities, including *sensitive* (perception and observation of subjects and events) and *intellectual abilities* (out-coming information processing).

Consequently, task-oriented development of all mental characteristics as well as sensitive and intellectual abilities (thinking as operational process, i.e. independent analysis making, synthesis, comparison and other mental operations) on the mathematical material will favour general development of mathematical abilities among children.

2. Why do some challenges appear?

Special or subject knowledge allow us “speak the language of Science” – operate with sign systems? Peculiar to a particular system, reveal and describe logics of conclusions with the help of familiar symbols (in our case – figures, letters, signs). Knowledge recorded in such a way becomes clear to an onlooker (a teacher, a tutor, parents), seeing and estimating cognitive results. Although the most important part of a mathematical process is left outside.

Initial mathematical visions of a child are formed on work with numbers and operations with them (i.e. counting and arithmetic operations). Great variety of symbols allows to make the process “transparent” and controlled. On the other hand, such process cannot serve development neither of mathematical thinking nor mathematical abilities.

The main way of pre-school children development is empiric generalization, i.e. generalization of their sense experience. Accumulation of such experience is based on sensory capabilities of a child (vision, hearing, sense of touch) and its “processing” is realized through intellectual capabilities. It is necessary to provide a child with conditions for investigation and experimenting, in order to start the “engine” of this process. In other words, educational content should be both acceptable by senses and favour his experimental needs. Such experimenting may result in development of a child on the way of the World perception and understanding. You, probably, have mentioned that there is a kind of contradiction: a figure as a mathematical issue is a highly general abstraction with ... from basis of its construction. Despite of the way chosen for “natural number’s” construction – on the meaning of “set” or on scalar quantities’ measurement – Number as the key issue

of mathematics is abstract, impossible to be directly perceptible for senses. Any “object snap” of a Number (e.g. use of trees, rabbits for counting) is a double loss of abstraction and consequently loss of the essence’s generality. We should speak about “double” loss because in this case we deal not with graphic image (number of pixels) but variety of trees or rabbits, etc. This image is directly perceived by a child, acts in experiments. Results are fixed in empiric generalization. This can be proved by the fact that primary school children often lose results of such generalization when the teacher change rabbits for trees, for example. They see this change as a new situation and repeat the whole process from the very beginning.

Theoretically we may conclude about importance of numerous experiments with different objects for the sake of right empiric generalization. But in practice it is not true for many cases. Reasons are different and vary from individual perception abilities up to lack of descriptive materials. In this sense, traditional substitution of independent work with observation of the teacher’s activity cannot be adequate. So, contradictions mentioned contain reasons for high level of unpredictability, if we speak about creation of mathematical abilities.

Early introduction into numeric and sign symbols (i.e. early symbolization) is not widely recognized. Pre-school children learn it very easy as it is usual way of coding for their plays. Nevertheless, symbols get separate meaning due to absence of ready symbols configuration. Herewith its external manipulation replaces implicit operating with mathematical notions and relations.

There is a great variety of examples from teaching practice. They prove independence of symbols if we speak about the children’s mind. At the same time, its link with real sense of notions and relations is quite peculiar. Judging from experience and examples given above it is evident to say that children can easily remember order of presentation as well as symbols themselves. On the one hand, examples show lack of flexibility and deepness of child’s thinking; on the other hand, they reveal tendency to formalization (it is easier to learn strictly shaped images).

3. Arithmetic? Algebra?? Geometry!!!

There are several components in the mathematical content: arithmetic material, algebraic and geometrical materials. The first and the second ones are incorporated into quantitative characteristics of subjects and their groups (arithmetic is based on notion “number”), are connected with generalization process of their qualitative characteristics (letters are used in algebra for qualitative characteristics) and operations (algebra is based on notion “operation”

equal to more general notion “actions” from arithmetic).

Even slight analysis of mathematical notions mentioned above proves that we deal with abstractions of high-level difficulty and generality. In particular, counting of apples in a set or rabbits on a meadow need a child to be disembodied from all perceived objects’ qualities (colour, size, shape, taste etc.). At the same time a child should concentrate on such characteristics as “quantities of variety”. As for algebraic symbols, it needs disembodiment not only from qualities and characteristics of objects but also from their quantity: x of rabbits, y of carrots.

Learning of Geometry has its specific character, too. Its major components are figures and bodies on two- and three-dimensional space. As it is possible to create models of all geometric objects, investigate and operate with them, initially and in pre-school period we usually use sensor abilities of children.

Analysis of mathematical programs and manuals for school children reveal an interesting tendency: mathematical educative material mainly consists of arithmetical material. Among typical exercises for 1st-year pupils there are counting, numbers and natural numbers’ qualities accompanied with arithmetical exercises, addition and subtraction tables, arithmetical problems, multiplying and division tasks, double figures etc.

It is a kind of paradox because all notions mentioned are highly abstract and demand not on “imagination” but abilities of abstraction without sensory support, which turn to be impossible for a 5-6 years old child. Use of geometrical content in work with pre-school children helps to omit all these methodological challenges. A model of any geometrical notion can be directly perceived by a child. Besides there are other advantages of geometrical material use:

1. It helps in work with the “Zone of proximal development” with reference to experience and knowledge of children. More difficult task motivates a child for new activities in mathematics. First, children copy models and way of work with them assisted by a teacher; then try to construct according to a picture etc.
2. It helps in creation of evaluative environment with the help of new material use (but not by speeding educational process). For example, a 2-3 year child makes easy compositions operating with geometrical figures. In fact, he learns their features and qualities (sides’ length, parts positions etc.) In 3-4 years age a child analyses their similarity and differences in their size, sides’ length, their number etc.

When a child is 6-7 years old, he compares different objects, formulates comparison’s and generalization’s results, makes an assessment of qualitative characteristics, describes separate space and qualitative aspects of the objects etc.

In this case, we don’t need annually insert new figures, enlarge list of notions, borrow new issues from school program. The only thing needed is set of new exercises, reveal of new features in familiar notions and new relations between them

3. Geometrical material helps in resting on children’s interest in experiments – natural means for learning the material by children of a certain age.
4. It stimulates the process of mental development, necessary for any cognitive problems solution.
5. It gives an opportunity for building the educational process based on plays. They are interesting for children as constructive activity itself is perceived by children as a play, makes them interesting and does not acquire additional plots.
6. It promotes graduate and more stable learning the material. Initially, on the stage of an adequate mental act’s formation an external base is needed. It will be used by a child as a model later on. Working with arithmetical material we may face some problems with such external basis’ creation.
7. By means of mathematical activity it helps in development of such qualities of a child as observance, assiduity and ability to plan succession of operations etc. So, structures of any kind need child’s ability to work with notions and relations. Effective development of mathematical way of thinking on the geometry material is connected with formation and development of cognitive abilities (both sensory and intellectual). In this context, education is based not on qualitative but space objects’ characteristics. It means that first forms and motions are perceived, and then come qualities. It makes all children equal in ability to learn mathematics.

7. Conclusion

Consequently, we may state that reasons for “mathematical abilities” being a rare case lie in educational system as such. System of introduction into the world of mathematics does not coincide with children’s way of understanding it. It is well known that not all abilities of children are seen on the surface, so a teacher needs to find, reveal them. Unfortunately, this pedagogical axiom does not work

if we speak about methods of teaching mathematics. Teaching the subject is aimed at content but diminishes the key objective of any kind of education – personal development of a pupils resulting in abilities creation, mathematical abilities including.

A Proposal Study for Designing and Introducing Automated Tools and Procedures Incorporating MATLAB Package for Undergraduate Basic Discipline Studies

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Abstract

Research study to elicit and design a simplified method in order to model the scientific concepts and basics for many learning fields and disciplines such as Mathematics, Physics, Chemistry, Statistics, Electronics, Communications, Systems & Control, etc using the MATLAB package that has been taught in Universities and in High Schools to establish a new generation of graduates by using scientific and modern academic curricula. First year Mathematics was taken as an example subject in this study and could be generalized to the other subjects.

Graphical user interfaces (GUI) program developed and implemented to solve almost all the problems that first year Mathematics curriculum contains.

This proposal is cost effective and its plan is technically feasible since the fulfillment of this goal would revolutionize teaching and education, and it will make it possible for many more students to learn, do, and appreciate MATLAB programming, since MATLAB would build the skills that are necessary to compete for the jobs of tomorrow.

1. Introduction

This proposal will try to persuade The Ministry of Education / Science & Technology to develop and introduce special curriculum content for teaching college and high school students the MATLAB package to help them tackle and solve problems. Since problem solving is identified as a top priority in many curricula in science, technology and engineering.

MATLAB (short for MATrix LABoratory) is a high-performance interacting data-intensive software environment for high-efficiency engineering and scientific numerical calculations [1, 4, 8, 11, and 17]. Applications include: heterogeneous simulations and

data-intensive analysis of very complex systems and signals, comprehensive matrix and arrays manipulations in numerical analysis, finding roots of polynomials, and two or three-dimensional plotting and graphics for different coordinate systems, integration and differentiation, signal processing, control, identification, symbolic calculus, optimization, etc [1, 6, 20]. The goal of MATLAB is to enable the users to solve a wide spectrum of analytical and numerical problems using matrix-based methods [5], attain excellent interfacing and interactive capabilities, compile with high-level programming languages, ensure robustness in data-intensive analysis and heterogeneous simulations, provide easy access to and straightforward implementation of state-of-the-art numerical algorithms, guarantee powerful graphical features, etc [11]. Due to high flexibility and versatility, the MATLAB environment has been significantly enhanced and developed during recent years. This provides users with advanced cutting-edge algorithms, enormous data-handling abilities, and powerful programming tools [7].

MATLAB is based on a high-level matrix / array language with control flow statements, functions, data structures, input / output, and object-oriented programming features [6].

MATLAB was originally created to provide easy access to matrix software developed by the LINPACK and EISPACK matrix computation software. A numerical analyst called Cleve Moler wrote the first version of MATLAB in the 1970s [7, 19]. It has since evolved into a successful commercial software package. MATLAB, also, has progressed over the last 20 years and became the standard instructional tool for introductory and advanced courses in science, engineering, and technology. The MATLAB environment allows one to integrate user-friendly tools with superior computational capabilities. Users can practice and

appreciate the MATLAB environment interactively, enjoying the flexibility and completeness, analyzing and verifying the results by applying the range of build-in commands and functions, and expanding MATLAB by developing their own application-specific files, etc [10, 17]. Users quickly access data files, programs, and graphics using MATLAB help. A family of application-specific toolboxes, with a specialized collection of m-files for solving problems commonly encountered in practice ensures comprehensiveness and effectiveness. SIMULINK is a companion graphical mouse-driven interactive environment enhancing MATLAB [2, 13]. **SIMULINK®** is used for simulating linear and nonlinear continuous-time and discrete-time dynamic systems. The MATLAB features are illustrated in Figure 1.

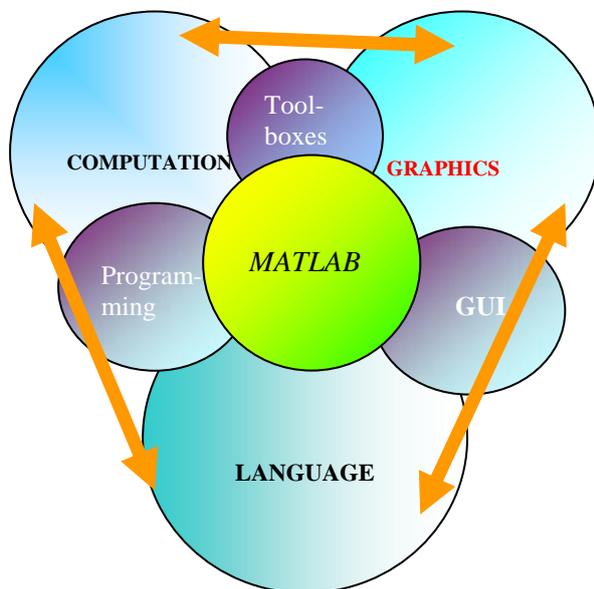


Figure 1. MATLAB features

In this proposal, the need for MATLAB as a pedagogical tool in Science / Engineering is highlighted. The proposal concludes with relevant observations and recommendations.

A First year university Mathematics course was taken as an example. A graphical user interfaces (GUI) program was developed and implemented to help students solve their mathematical tutorials / problems.

2. MATLAB and its toolboxes

MATLAB distributed by The Mathworks, is a technical computing environment for high performance numeric computation and visualization. It integrates numerical analysis, matrix computation,

signal processing, and graphics in an easy-to-use environment [11].

MATLAB also, features a family of application-specific solutions called toolboxes. They are very important to most users of MATLAB, toolboxes allow users to learn and apply specialized technology. Toolboxes are comprehensive collections of MATLAB functions (m-files) that extend its environment in order to solve particular types of problems [5, 6, 17]. The Table 1 below includes the toolboxes that are available in the latest version of MATLAB.

Table 1. MATLAB toolboxes

Communications	Image Processing	System Identification
Control System	Instrument Control	Wavelet
Data Acquisition	Mapping	MATLAB Compiler
Database	Neural Network	MATLAB C/C++ Graphics Library
Datafeed	Optimization	MATLAB C/C++ Math Library
Filter Design	Partial Differential Equation	MATLAB Report Generator
Financial	Robust Control	MATLAB Runtime Server
Frequency Domain System Identification	Signal Processing	MATLAB Web Server
Fuzzy Logic	Statistics	Simulink
Higher-Order Spectral Analysis	Spline	Symbolic/Extended Math

3. What MATLAB can do and tackle?

This will provide the reasoning for MATLAB applications. MATLAB can solve from easy to advanced application-specific problems to illustrate the applicability and versatility of the MATLAB environment [15, 20]. For example, in a multivariable calculus subject, students can study and perform the following using MATLAB programming: parametric and polar equations, vectors, coordinate systems (Cartesian, cylindrical, and spherical), vector-valued functions, derivatives, partial derivatives, directional derivatives, gradient, optimization problems, multiple integration, integration in vector fields, and other topics. In contrast, linear algebra emphasizes matrix techniques for solving systems of linear and nonlinear equations covering matrices and operations with matrices, determinants, vector spaces, independent and dependent sets of vectors, bases for vector spaces, linear transformations, Eigenvalues and Eigenvectors, orthogonal sets, least squares approximation, interpolation, etc [3,4,6-8]. The MATLAB environment is uniquely suitable to solving such a variety of problems in science and engineering. Using the calculus and physics background, a variety of real-world scientific / engineering problems can be attacked and resolved.

MATLAB integrates computation, visualization, and programming in an easy-to-use systematic, robust and computationally efficient environment

where problems and solutions are expressed in familiar (commonly used) mathematical notation [12, 14, 15]. The user can perform mathematic computation, algorithm development, simulation, prototyping, data analysis, visualization, interactive graphics, and application-specific developments including graphical user interface (GUI) features by using just one or two commands [9, 11-13, 16, 21]. In MATLAB the data is manipulated in the array form, allowing the user to solve complex problems. It was emphasized that the MATLAB environment was originally developed using data-intensive matrix computation methods.

4. Advantages of MATLAB

MATLAB offers a number of significant advantages over traditional high-level programming languages such as FORTRAN or C:

- **More power.** Using MATLAB, a student or engineer can solve difficult problems in less time and with less effort [1, 3-5, 8, 10, 20].

- **Greater ease of use.** MATLAB is easier to master than a high-level programming language. As a result, the students have the tools to solve significant engineering problems much earlier in the semester [4, 6, 8].

- **Emphasis on problem solving.** Rather than becoming entangled in language issues, students can concentrate fuller on the problem to be solved. Students can tackle more problems of greater complexity and still have time to analyze their results [1, 4, 5, 10, 18, 20].

- **Fewer errors.** When using MATLAB, students make fewer errors. Moreover, they are more able to find and correct the errors themselves, requiring less help from instructors and teaching assistants [3, 13, 17, 18].

These advantages provide only a brief glimpse of the power and flexibility of the MATLAB system [7, 18, 19].

5. Developing Matlab GUI's Program

MATLAB Version 5 and beyond allows the user to build GUIs (or graphical user interfaces). A GUI is simply an interface that can call upon different MATLAB operations and perform them without the user needing to know the MATLAB language. In MATLAB, typing the command for the GUI creates a window where graphs, text boxes and clickable buttons appear that carry out a series of MATLAB commands [16]. The GUI's programs (MATH 1 & MATH 2) can be seen in Figure 2 and Figure 3 respectively. In Figure 2 the following calculations could be done: Determinant, Eigenvalues, Eigenvectors, Inverse and Transpose of a Matrix. In Figure 3 the following calculations could be done: Roots of the polynomial, Differentiation, Integration, Curve Drawing, Laplace Transform, and Inverse Laplace Transform.

Curve Drawing, Laplace Transform, and Inverse Laplace Transform.

These programs will inspire, motivate and help students relate in-class mathematical concepts to real-world events. It would make them feel tremendous satisfaction after checking and comparing their manual solutions of the problems to those obtained by using these GUI's programs [20, 21].

These two programs will also cultivate interest, raise achievement and will build the skills that students need to compete for tomorrow's jobs.

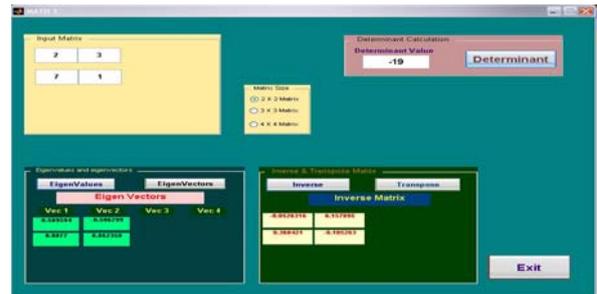


Figure 2. Calculations of the following: determinant, eigenvalues, eigenvectors, inverse and transpose of a matrix

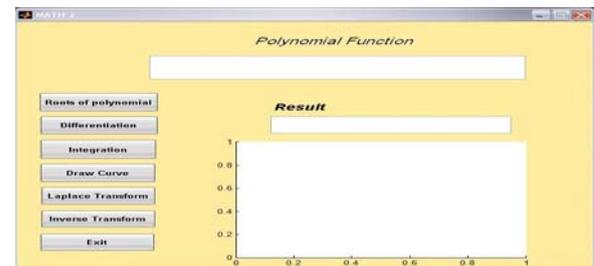


Figure 3. Calculations of the following: Roots of the polynomial, Differentiation, Integration, Curve Drawing, Laplace Transform, and Inverse Laplace Transform

6. Integrating MATLAB into Classical First Year Mathematical Curriculum

The simple assumption of “integrating MATLAB into a mathematics curriculum” is not at all simple to students. Since the curriculum was chosen and cannot be altered, a supplemental booklet could be printed and issued by the Department to help students and roaming tutors to work and use MATLAB. The supplemental booklet will contain full explanations of the GUI programs (MATH 1 & MATH 2) that would be used in the computer/tutorial sessions. This booklet consists of all the tutorial questions of each chapter of the curriculum that students should solve and check during their computer sessions, students will then

discover the correct solutions, i.e. this booklet should link with the lectures material.

7. Conclusions

In this proposal, the need for MATLAB as a pedagogical tool in Science / Engineering is highlighted. The proposal concludes with relevant observations and recommendations.

The MATLAB package is very powerful and much easier and quicker to master than any other traditional programming language (C++, Visual basic etc). This package will inspire and motivate students, and will help them relate in-class mathematical concepts to real-world events and will make them feel tremendous subsequent satisfaction. This, also, will broaden science, technology and engineering education.

The potential benefits of teaching MATLAB are immeasurable, since it is widely used in classes and is proving to be a very effective teaching aid.

One proposal is that The Ministry of Education/ Science & Technology should make the development of teaching MATLAB its foremost goal and should seek support for the pursuit of this goal from research and education communities. This proposal is cost effective and its plan is technically feasible since the fulfillment of this goal would revolutionize teaching and education. It will also make it possible for many more students to learn, practice, and appreciate MATLAB programming, since MATLAB will build the skills that are necessary to compete for tomorrow's jobs.

8. Recommendations

The following recommendations are made for the use of MATLAB as a pedagogical tool in science, technology and engineering education:

- MATLAB should be introduced in the nation's science and engineering faculties and made compulsory for all science and engineering students.
- Science and engineering faculties should encourage their teaching staff to attend workshops/seminars on the most recent version of MATLAB.
- MATLAB groups among students should be encouraged in all the nation's universities. These groups should be involved in discussions about problems encountered and successes made whilst solving a particular problem.
- Calculations and analysis done using MATLAB should be well documented for future references.
- Inter-university and inter-departmental competitions among students on MATLAB and its programming application should be

encouraged to stimulate interest in the use of the software.

The Ministry of Education / Science & Technology must ensure that the introduction and use of MATLAB is compulsory throughout the nation's science and engineering faculties and this can be achieved through the introduction of appropriate legislation.

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Through Parents' Eyes: A Participatory Visual Literacy Project

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Abstract

This visual literacy study, embedded in an intergenerational instructional innovation at an urban primary-junior school in Ontario, Canada, used photography to ascertain caregivers' perceptions of their children's everyday experiences. Photographs, logs, and discussion sessions documented the culture-filtered understandings and sensibilities of caregivers as they reflected upon children's educational experiences in their newly adopted country. Beyond this anticipated function, these data sources served as conduits through which professional educators could access domains of knowledge related to spheres of influence in children's lives that are not normally discovered through standard schooling practices. Equally importantly, they helped immigrant parents to access, and better understand, the diverse resources that children call upon as they navigate various aspects of their Diaspora experiences. Thusly, the photographs functioned not simply as representational icons that substituted for verbal texts but also as heuristics that drove participants' thinking about the psychological and social worlds of immigrant students.

1. Introduction

This paper reports on the findings of a visual literacy study for linguistically diverse parents/caregivers and their children. The study was embedded within an intergenerational instructional innovation for families of students attending a primary-junior school in an urban setting in Ontario, Canada. The project envisioned three goals: a) enhancing the learning and achievement of immigrant, linguistic minority students by providing a complementary, community-referenced venue for language and literacy learning; b) familiarizing immigrant parents with the education system in which their children were enrolled and with provincial expectations for their children's academic performance, with a view to parents' participation and advocacy in their children's public schooling;

and c) promoting an institutional climate that privileges diversity as a resource.

As a result of recent immigration trends, linguistic and cultural diversity now define a majority of the school-age population in many urban areas. Among the many challenges confronting them, immigrant parents also must meet the expectations – now integrated into the accountability protocols associated with state-supported public education – regarding caregivers' roles in supporting their children's academic progress in and through school [1],[2]. Undergirding these expectations is the assumption that caregivers will want to contribute to their children's education by “partnering” with professional educators to maximize the benefits from students' day-to-day schooling activities and experiences [3],[4]. However, being involved in the education of their children requires that parents negotiate a common understanding with educational communities regarding appropriate roles and prerogatives of different stakeholder groups and establish social relationships with school educators. Most parents find these processes daunting; for those parents who have not yet mastered the societal language, they can be overwhelming [5],[6].

2. The Problem

To facilitate – perhaps even jumpstart - the above processes, we sought to ascertain parents' perceptions and interpretations of the social relations and processes that influenced and organized the everyday experiences of their children – in particular, their perceptions of the routines and practices that constituted their children's responsibilities as students and family members. However, we confronted a significant logistical problem in our efforts to ascertain caregivers' perspectives and input: a majority of the caregivers we interacted with were barely (if at all) able to communicate in English; they most certainly were unable to contribute the level of nuance with regard to the organization of family members' everyday experiences that we needed in order to inform our interpretations as researchers and educators. So, to

find out more about the home lives of our students, we needed to find a way around this impasse.

3. Method

In this section we outline the use of photographic representation of participants' lives in the description of the study design and data collection methods.

3.1. Overview: Photography as Text

The "self-representation activities" [7] around photographic texts have been found to constitute an effective heuristic for tapping into participants' lives and their perspectives about the significance of social processes for these lived experiences and events [8], [9]. Some authors [10],[11],[12],[13] have used a "photo-voice method" to incorporate photography with participatory action research by having participants represent their social worlds using photographs which they then analyzed for meaning. The photographic text has been used as an effective visual presence for participants in a conversation [14] and has held referential value beyond the text through which readers, through association, can connect [15], [16].

Drawing on the work of McCoy [14], who devised a method of activating visual texts by making text-reader conversations observable, we encouraged participants to use photographs to represent significant events in their children's lives. We further decided – as had [17] – to organize the collection of visual data following predetermined themes that were linked to the goals of the research. We used preliminary glosses and subsequent photo-interview discussion sessions [18], [19] to: (a) generate additional data, (b) further probe the ways in which participants perceived their life worlds and those of their children, and (c) ensure that caregivers participated in the analysis of the collected data. Finally, we used an open-ended approach to the discussion sessions to facilitate a process more aligned to a conversation among peers over a theme of interest than a formal interview [17].

3.2. Design of the Study

Participants in the study included 20 parents of Grade 5 and 6 students (aged 10 to 12 years). The authors chose four themes that we believed would draw out and illuminate parents' perspectives on issues and topics of interest to the children's educators. These themes, in the order presented, were: (a) learning at home and in the community, (b) homework, (c) my child's good day/bad day, and (d) O Canada.

Each family was given a disposable camera with 24 exposures. Parents were asked to capture, over a 4-week period, those aspects of their child's life that corresponded to their perceptions of the child's lived experiences around the four designated themes. The themes were introduced to caregivers by the study's coordinator, a Grade 6 teacher, at the project's weekly meetings. Parents were allotted a maximum of six exposures per theme.

Using the language in which they felt most comfortable expressing their thoughts, parents were asked to use a Photography Log to record the exposure number, time, location, and rationale for taking each photograph. Where languages other than English were used, we elicited the help of translators. The photographs and log reflections were used as a basis for subsequent small- and large-group discussions (described more fully below). Field notes were taken and audio recordings were made of the group discussions. Selected portions of the recordings were transcribed in full.

3.3. Data Collection and Analysis

The study's design provided for three distinct data sources: (a) the photographs taken by participating parents constituted a primary data source; (b) written texts produced by parents in the form of photography logs provided a secondary data source; and (c) the photo-interview discussions (based upon the photographs and logs) generated a tertiary source of data. In the spirit of recursive data collection and analysis [20], the photo-interview discussions also constituted a primary strategy for data analysis, as parents recognized and identified common themes emerging from the data.

In the final two sessions of the project, caregivers shared their experiences and interpretations with one another. During the second-last session, participants gathered around tables in their usual small groups, shared the photographs they had taken in sequential order, and discussed the larger issues that prompted the photographs. We used prompts to facilitate the discussions (e.g., *Where is this photograph taken? What is your child doing here? Why did you choose to take this picture?*). Toward the conclusion of this session, group members turned their attention to the common themes and shared experiences revealed by the photographic evidence.

In the last session photographs of the entire group were displayed at table clusters according to theme. Participants were given an additional opportunity to look at and reflect upon the photographs of other parents and to discuss the issues that the photographs raised according to theme. Here, however, we drew out parents' insights and understandings in large-group discussion, using prompts of a more summative and evaluative nature

(e.g., *What have you learned from this experience? What did you learn about your child through this project that might help us as teachers? What have you learned about yourself? How has your knowledge or perception of your child's home/school experiences changed? Which themes did you find the most informative?*). Although the discussion was facilitated by these guiding questions, it was not controlled; that is, where conversation flowed, facilitators did not attempt to influence its direction.

We employed textual analysis to analyze the data from photographs, log entries, and transcripts from small- and large-group discussions. To begin, we coded primary (photographs) and secondary (log entries) data for generative topics within the four guiding themes. We used the principles of institutional ethnography for the analytic purpose of identifying and describing social relations and processes that extended beyond the boundaries of individual participants' localized experiences [21]. This approach was undergirded by the belief that the social organization of everyday life is a result of purposeful, concerted, and co-ordinated activities [21], and that the kinds of lives that are instantiated by actors are both facilitated and impeded by social structures such as rules, resources (including those of an ideational nature), and the relationships made available within institutions and social networks [16].

4. Findings

The primary purpose of this study was to discover recently immigrated parents' perceptions of their children's schooling and life experiences. As previously mentioned, data were collected and organized around four thematic headings. We chose to present here the findings from the three themes which, in our opinion, best represent the study's most significant findings.

4.1. Learning at Home and in Community

4.1.1. Language and culture. The photographic texts associated with this theme illuminated the importance that parents placed on supporting literacy practices in their homes. Photographs taken to illustrate this theme included children engaging with texts associated with school learning, surfing the Internet for the purpose of informing school or recreational projects, reading and reciting religious texts, and studying their first language as part of a larger strategy of linguistic and cultural maintenance. Parental support for and involvement in these home literacy projects was clearly evident in the photographic texts, as well as in the glosses and discussions.

The importance of the children's first languages was a significant concern for parents. The majority of them believed that: (a) the ability to speak, read, and write more than one language is inherently enriching; (b) maintaining their first language is important for retaining their heritage culture; and (c) speaking their language of origin is essential for maintaining relations with family members who did not emigrate. In the photo-interview discussions, in particular, parents expressed sorrow over the gradual first language attrition that they observed in their children. Together they shared various strategies for and difficulties in encouraging their children to value and use their heritage languages. However, most conceded that, because the language of media and education is English, it is difficult to avoid English at home.

Despite their concerns about the use and retention of their first language as an important component of learning, parent participants acknowledged the school's dominant role in co-ordinating many of the literacy activities in which their children are engaged while at home. One parent asked, "Is it okay to use my first language when I help my kids with math? Can I explain math problems in my own language?" Another parent felt that it was important for children to practice writing in their native language and suggested that teachers make time and space for children to do meaningful writing in their first language at school. A third parent suggested that teachers could sometimes give students material to translate into their first language, which would allow parents who are not fluent in English an opportunity to assist their children with homework.

The photographic texts also reveal how caregivers use social structures within their communities, such as community-based heritage language programs, to support their commitment to maintaining their mother tongues. For example, one photograph shows a group of children going to a community school to learn their first language. The log entry reads, "Mina and Arabic. Mina goes every Sunday to Valleys School to study Arabic 'native language' with other kids in our community."

4.1.2. Religious practice. Other photographs within this theme communicated many parents' views that an important dimension of learning at home and in the community is religious instruction and practice. Photographs depicted students involved in religious activities such as praying alone, with family members, or with community members in their age cohort. Figure 1 and the accompanying log entry confirm the important role that religious engagement plays in the learning that takes place at home.



Figure 1. Idrisa learns all kind of worship and prayer from home.

In the group discussions, parents emphasized the importance of religious practice for maintaining their connections to their cultural communities as well as for teaching their children how to live good lives and develop character. Figure 2 shows a child engaged in group meditation in a formal religious setting.



Figure 2. Meditation. Learning to sit quietly for 1½ hours and pray, sing songs and meditate with all age groups.

In their discussions, parents elaborated on how they used community structures to co-ordinate their children’s religious and cultural education while fostering first language development. They felt that these community venues reinforced the legitimacy of their own values related to cultural and linguistic maintenance, and provided students with important social networks for learning.

4.1.3. Housework. Photographs within the learning at home and in community theme also highlighted the parents’ commitment to ensuring that their children develop basic life skills, such as the ability to contribute to the domestic economies of homes. For example, the entry in the photography log for

Figure 3 reads, “Idrisa learns all kinds of household work like washing, cleaning, and organizing from her mom.”



Figure 3. Idrisa learns all kinds of household work like washing, cleaning, and organizing from her mom.

Another photograph illustrates a child engaged in the activity of grocery shopping. In subsequent discussion, the child’s mother elaborated on her perspective on the importance of providing opportunities for her child to make choices for the family.

4.1.4. Caring for community. The importance that parents placed on their children developing a sense of civic responsibility emerged through the photographic texts and in the discussion sessions. Various photographs depict children engaged in activities such as recycling household objects, caring for the environment by collecting strewn garbage from apartment grounds, and helping less fortunate community members with chores. A photograph entitled “Helping in Canada” (Figure 4) shows a young girl standing beside a relatively large bin recycling what appears to be paper material. The accompanying log entry highlights the enthusiasm with which the girl embraces the activity.



Figure 4. Helping in Canada. When Idrisa sees other people do recycling she really likes it and tries to make it her habit.

Another parent's log entry affirms the value of helping community members: "Caroline doing dishes for an elderly woman where we live. She often helps this person that is unable to do things herself. Shows she is caring and willing to give of herself to help others. Learning to be generous."

4.1.5. Cultural literacy. Parents observed that the activity of engaging in this visual literacy project opened their eyes to different types of learning events that they took for granted in their children's daily lives. For example, the parent who took the photograph entitled "Children learn discipline at school bus stop" (Figure 5) had not previously realized that, for her child, the formal school day began with this event. In her discussion group she commented:

I think when children usually go by bus they usually learn discipline because on the bus they are all in one line otherwise they are all gathered here and there playing in the snow. So when the bus comes, they line up. They line up otherwise they all playing in the snow. Only when they see the bus comes in the street they all line up.



Figure 5. Children learn discipline at school bus stop.

This parent, who had also taken several photographs of her child engaged in recycling activities, later expanded:

When I asked [name of child] what did you learned from the community, I had no idea at that time ... I was so surprised in a moment she answered me. "Recycling, going on the school bus" [short pause] I was so happy because I did not know about these little things. I saw my daughter do this, do that, but I did not realize that those things are so important [short pause] these things lay hidden before this project.

In Canadian society, a significant degree of socialization of children occurs outside of processes

associated with parenting and formal schooling. The photographs provided textual representations of key events associated with important socio-cultural ways of being into which children in Western society are acculturated. For immigrant parents, gaining insight into the seminal role of these activities and events represented an acquisition of cultural literacy.

4.2. Homework

The sharing of the homework photographs drew out parents' perceptions of the nature of homework within the context of Western schooling and the resources that students must call upon to complete related assignments. Group discussions revealed parents' varying orientations toward different aspects of school-assigned work and their roles in the accountability process.

4.2.1. The collaborative nature of homework. The photographs provided effective heuristics for parents to engage in discussion about ways in which they believed they facilitated – or encountered barriers that prevented them from facilitating – their children's academic success. Parents cited barriers such as conflicting work schedules, lack of fluency in the language of instruction, and lack of familiarity with the school curriculum. In her photography log, one mother commented: "This picture shows Caroline struggling with French translation and spelling looking up words. I feel bad because I haven't taught any French in my home and I do speak the language." In small-group discussion, another parent volunteered: "I try to help them with their homework. When our kids learn we learn. I don't know some things. If I don't know, we Google it. We can solve problems together."

Certainly the discussions around this theme supported the observation by Carreon and colleagues [22] that

parents' educational engagement and presence within the home space is a practice through which parents can construct a self-identify as one who supports their children's schooling. (p. 11)

However, the amount and kinds of support adult participants were able to provide for their children's school learning varied. This variation was caused by factors such as: parents' employment status, which influenced when and for how long they could be available to help their children during non-school hours; and their familiarity with and access to resources such as computers.

One photograph in particular sparked a group discussion that revealed parents' understandings that their children's academic support networks needed to extend beyond their immediate family circles. The

photograph (Figure 6), which shows a child talking over the phone to clarify a homework assignment, illustrates an important way in which children learn and are supported by their peers.



Figure 6. Calling a Friend. I am communicating with others.

4.2.2. Computers and library outings. Many photographs depicted the children using computers. The number and variety of photographs under the first two themes related to computer use reflects a socio-cultural expectation, on the part of both the school and families, that children will develop technological competencies alongside other aspects of academic literacy. The value that caregivers placed on computer access was reflected in both the photographs and subsequent small- and large-group discussions. As well, in their logs and verbal exchanges, parents revealed that many families supplemented the resources available in the home through frequent outings to the local public library. Parents appreciated the availability of these public resources, perceiving them as important vehicles for their children to attain and reinforce the knowledge and skills that were increasingly necessary to succeed academically.

4.2.3. Homework can be messy. Several photographs (Figure 7) and logs revealed a consensus that the creative process involved in school-related learning can be untidy. Responses to this aspect varied. Parental comments ranged from somewhat negative (“very messy work – paper and food on the table – I don’t like this mess”) to very positive (“sometimes mess gives a person more ideas”).



Figure 7. Lots of mess while doing homework.

In addition to computers, photographs of children doing homework revealed the presence of many other material resources – lined writing paper, colored manila paper, pens, lead pencils, glue sticks – that were used to support school learning. Regardless of where parents weighed in on the tolerance-for-mess continuum, these various material items were viewed as necessary support for the daily routines associated with homework activity.

4.3. O Canada

Here we highlight the diverse perspectives that reflect the Canadian experience of new immigrant families in this study.

4.3.1. Winter. The thematic rubric *O Canada* generated insights into immigrant family members’ New World experiences. Overwhelmingly, for recently translocated families, Canada evoked the image of winter. Many of the photographs taken to illustrate this theme depicted students playing in the snow. As evidenced in Figures 8 and 9, these associations generally were positive.



Figure 8. The Snow. To show the Canadian weather in winter and how our kids practice its activities.



Figure 9. Friends. Joanna was so happy to be playing in the snow with her friends and her sister. She enjoyed talking and laughing with them and being happy.

4.3.2. Longing for family. However, there was a more sombre aspect to the images associated with the expatriation and repatriation subject position. Indeed, many photographs revealed caregivers' recognition that, in terms of parenting decisions, the family's immigration to Canada was both difficult and complex. In both large- and small-group discussions, participants emphasized that their main motivation for immigrating was to provide their children with opportunities to secure a better economic future than they had been able to enjoy thus far – opportunities that they associated with Canadian schooling. However, despite these significant incentives, parents acknowledged that longings for family and friends in their countries of origin constituted an unavoidable reality of their children's Diaspora experiences. These feelings of loneliness and loss are captured poignantly in Figure 10 and its accompanying log entry.



Figure 10. There is some hidden feeling of loneliness in this new country. Idrisa misses her grandparents, cousins, uncles and aunt a lot.

In the small group discussion sparked by this photo, Idrisa's mother revealed that her daughter was reluctant to share these feelings of melancholy and longing with others. Before her involvement with

this project, Idrisa's mother had thought that her family were the only ones to be suffering such ennui:

After I have passed one year in this country, and you know I think one month before, Idrisa said something quietly. I said, "What happened?" She started crying. She said, "What can I do here? I miss my grandparents." I was shocked....I realized that there are some feelings that she doesn't share with us...Last year was the very worst for me. There were times that I thought we would have to go back, really. I told my husband no need to stay here. We got everything there [home country] if we go back. We are staying here only for our children. If our children spoil there is no bigger loss than that.

In addition to feelings of loss of extended family connections, another significant challenge that parents associated with migration and acculturation related to changes in the family dynamic. Parenting roles and parents' sense of identity/positionality with their families appear to have been significantly influenced by factors such as: changes in the employment status of one or both parents, lifestyle changes related to under-employment, and separation from spouses due to immigration processes. For example, one parent commented:

We had everything back home. Since here my husband works two jobs. Sometimes my husband gets back from work and he is so tired he can do nothing with the children. I say sorry. Only stay for the meal. You have to try because this is the only occasion that we share our family happiness.

4.3.3. Negative encounters. Participants commented on the need to help their children navigate difficult social contexts, such as dealing with bullying behavior and acts of discrimination. In her small-group conversation, one parent discussed her painful experience as she helplessly watched her child's confidence erode as a result of being persecuted by peers at school:

I thought it was a mistake to come to Canada. I did not know who to talk to about problems. For 9 months I did not know who to talk to until I received a pamphlet from school and it said to discuss [bullying problems] with teacher.

This same parent went on to express how knowledge made a difference in her and her child's circumstances, how she handled the situation, and how it was resolved.

In a subsequent discussion, another parent recounted her child's experience with discrimination

and bullying. The facilitator, commenting on how difficult it must have been for this mother to see her child suffer, elicited this response: "Yeah. But the thing is that's what children are like. Everybody faces racism, but we have to manage it."

The difficulties experienced by recently translocated families while navigating new social contexts are well documented [5]. Studies describe family members' experiences in coping with loss and family change [23] as well as with racism [24]. Original to the findings of this particular study is participants' acknowledgment of the positive role played by the school in families' successful negotiation of these difficulties. Parents found information distributed by the school (in the form of pamphlets, advertisements for workshops, newsletters, etc.) enormously helpful and appreciated that many of these resources were made available by the Ontario Ministry of Education and/or by social and community agencies. Indeed, caregivers expressed the view that, had it not been for dissemination through the school, they would have remained ignorant about provincial norms and board policies concerning bullying and protocols for student conduct in general.

5. Discussion

The photographs, photography logs and discussion sessions that constituted the data collection strategy for this study served two important functions: (a) They documented the seminal culture-filtered perspectives and understandings held by caregivers as they reflected upon their children's educational experiences in their newly adopted country; and (b) they provided a crucial window into how community cultural wealth may be activated and expressed in the everyday lives of immigrant students as they and members of their support networks seek to navigate the challenges associated with coming to terms with an unfamiliar society and its social structures.

Beyond these anticipated functions, this qualitative research project resulted in a crucial outcome: it created new understandings and fostered empathy between immigrant parents and professional educators. Despite the goodwill of the study's participants, these dispositions simply were not available to respective stakeholders at the start of the project. However, the photographs, glosses, and group discussions opened two distinct channels of understanding. Firstly, they served as conduits through which professional educators could effectively access domains of knowledge related to those spheres of influence in children's lives that are not normally discovered through standard schooling practices. Secondly, and equally importantly, they helped immigrant parents to access, and to better understand, the diverse resources that children call

upon as they navigate various aspects of their Diaspora experiences. These aspects include: (a) their encounters with peers and community members; (b) the evolving dynamics, roles, and routines within their families; and (c) the syncretic effects of the interactions among heritage, new languages, and diverse cultural practices [25]. Certainly, all of these elements were represented in the data from the start; however, the use of the photographs as points of reference in the logs and in subsequent group discussions provided a strong catalytic effect for participants in terms of working through and extending their understandings.

For professional educators, this study also provided valuable insights into the extent to which the school context extends beyond the parameters of the classroom and the formal curriculum to influence the socialization of immigrant students and their families. It is evident from the testimony of parents that schooling practices and structures were tied significantly to many aspects of the lives of students and caregivers, including: (a) their social relations, (b) their ongoing interpretation of linguistic and cultural cues [26], and (c) their opportunities to build new forms of and contexts for literate engagement of cultural processes [27]. These syncretic effects range from relatively simple things (such as family trips to the library on weekends for the purposes of informing and completing school projects) to more complex elements (such as parents' complicity in the standardization of their children's learning through their partnering in the state accountability exercises). Finally, participants' responses to the visual literacy project indicated that caregivers both valued and enjoyed the opportunities provided to gain access and give voice to what they knew about their children's lives and their lived experiences. Indeed, for most participants, the venue fulfilled an important role in the development of positive ongoing relationships between caregivers and the school. As parents experienced their contributions being valued, they became increasingly motivated to build ongoing relationships with school staff and to establish their presence within the school culture.

6. Conclusion

We decided to use photography as a strategy for getting around the linguistic problems inherent in conducting research that involved gaining access to the perspectives of non-native speakers of the societal language. As the project progressed, it became clear that the photographs functioned not simply as representational icons that substituted for verbal texts but also as powerful heuristics that drove participants' thinking about the psychological and social worlds of their children and families. These heuristics served to highlight how the lives of immigrant children and their families are co-

ordinated through daily routines involving family, school, and community.

The results of our study reveal that the school, apart from the role it plays in the academic socialization of children, is a powerful vehicle for the dissemination of crucial information on societal norms, values, and practices. In the context of this particular study, embedded within an activist research agenda that privileged diversity as a resource, we found the association between the school and newly migrated families to be generally beneficial. Although we are persuaded of the value of visual literacy strategies in elucidating the perspectives of those whose voices are frequently marginalized within extant institutional structures, we are not so unrealistic as to expect that such favourable conditions for the empowerment of these members exist in most schooling contexts.

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Quality Assurance in Mathematics Delivery: Problems and Solutions

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Abstract

This paper examined the strategies to deliver mathematics for quality assurance. The world at large today is in the age of technology revolution and it is commonly believed that learning of mathematics will promote the scientific and technological development of a nation. It is therefore very necessary to ascertain the quality assurance of mathematics delivery. According to this paper, quality assurance in mathematics delivery is considered a guarantee of certainty in the effectiveness, efficiency and relevance in the teaching and learning of mathematics. The paper also examined the factors preventing quality assurance in the delivery of mathematics. For example, use of non specialist teachers, poor methods, inadequate infrastructures and students' related factors. Solutions were proposed which include the use of laboratory mode of teaching. Thus the paper believes in the strategies of quality assurance of mathematics delivery to sustain the nation.

1. Introduction

Quality assurance in education should be the concern of all since education is the key to national and social transformation [1]. The World Education Forum held in Dakar in 2000 did not only emphasize the need to achieve education for all, but did also notice the need to improve the quality of education [13]. The Nigerian government also recognized this fact that the Federal Republic of Nigeria [4] lays emphasis on universal, functional and qualitative education. The educated citizens are expected to imbibe such knowledge skills, attitude and values that will enable contribute and survive maximally in the society. Quality mathematics education is one sure way of achieving these objectives because of its roles in scientific, technological and national development [6], [10]. It is commonly believed that learning of mathematics will promote the scientific and technological development of a nation and that it helps professionals to use quantitative ability efficiently in relevant aspect of their work in their everyday life [11]. Mathematics encourages using of numbers and symbols whenever they occur in our daily lives, it provides opportunity for the understanding, appreciation and study of various shapes in our environments. Despite the importance of mathematics and the struggle to upgrade the quality of teaching the subject, students still dislike and fear mathematics. This is reflected in their performance for they perform poorly in the subject

[3]. The educational issues which give rise to this research problem are the continual decline of student's performance in mathematics. This is blamed on the techniques the teachers adopt to teach the students and inability of the teachers to relate abstract things to concrete things. Some students claim that the equipment and facilities are not readily available while some think it is due to home background and unconducive environment [2]. Various researchers have involved themselves in the problem of finding ways of improving the quality of teaching mathematics so as to secure learner's interest and consequently enhance their performance and their learning ability in the subjects. In spite of their efforts, the situation remains the same. This is the rationale behind the paper to find out the strategies that can be applied to control the quality of mathematics delivery by assisting the teachers to discover how students learn best so that they can adopt it to the teaching of mathematics.

The questions that come to mind are:

- (1) What are the problems militating against quality assurance in the teaching of mathematics?
- (2) What strategies can be applied to ensure quality in the delivery of mathematics?

The study will improve teacher's method of teaching mathematics and enhance student's performance. Quality assurance in mathematics delivery is secured and the nation will be developed.

2. The Concept of Quality Assurance

The term "quality" is defined in the Oxford Advanced Learners Dictionary [5] as the degree of goodness or worth of something. Quality could be used to mean fitness for purpose [8]. This implies that quality in education could be regarded as the effectiveness and efficiency of the administration, teaching and learning. The term "assurance" connotes feeling certainty as well as fitness for purpose [8]. Therefore, quality assurance means the guarantee of confidence and certainty by a programme of study given in an institution that standards and quality are being maintained and enhanced. Quality assurance is a term used in relation to accountability in the process. Similarly, quality assurance in UBE examines effectiveness and efficiency of the administration, teaching and learning. In the context of this paper, quality assurance refers to the strategies, procedures and processes put in place to ensure relevance of what is taught and learned in mathematics.

3. Problems Militating Against Quality assurance in the Teaching of Mathematics

There are many problems militating against quality assurance in the teaching of Mathematics. Some of these problems are stated and discussed below:

3.1. Lack of equipment and facilities for teaching [7]

In some rural even modern schools, teachers and students study under trees due to poor or inadequate classrooms. Similarly, most schools libraries are mere reading rooms as they lack current books and journals that are necessary for knowledge improvement [4]. Lack of availability of properly equipped mathematics laboratories has remained a matter of concern for quality teaching of the subject [11] confirmed that teaching mathematics by doing occurs mostly in the laboratory. Mathematics laboratories in most schools are not well equipped, they lack adequate furniture and experimental materials as well as technicians. In addition instructional materials including Information and Communication Technology (ICT) materials used in the teaching of mathematics and necessary for better assimilation of the curriculum is lacking in most schools. The teachers also lack the culture of improvisation of learning materials for the teaching of mathematics.

3.2. Teachers' Qualification, experience and attitude

It has been reported that teachers lack quality of dedication to teaching which often results in lesson not being properly prepared and planned and teachers being absent from their classes. There are also inadequate numbers of qualified teachers and use of non specialist mathematics teachers in the school [8]. Teachers' experience refers to the skill acquired by the teacher during the teaching job. Inadequate numbers of experience mathematics teachers in the school system possess a problem of quality assurance in teaching and learning of the subject. Also, teachers lack quality attitudes i.e. they are inconsistent in the ways of anticipating, evaluating and responding to students in the classroom. Teachers' behaviour as perceived by students affects to a large extent the students' attitude towards him and achievement in his subject [12]. Also, the teachers' negative attitude to his students tend to dampen the learner's interest in the subject.

3.3. Student-Related Factors

Most students have phobia for mathematics. Anxiety adversely affects the academic achievement in laboratory tasks, intelligence tests and workshop skills of students.

Similarly, students have negative study attitudes towards mathematics and students study habits also

determine the quality of teaching and learning in mathematics.

4. Quality Assurance in Mathematics Teachers

Quality of mathematics teachers is assured if the teachers possess the following attributes:

4.1. Mathematics teacher should have the knowledge of subject matter

For mathematics teacher to satisfy the intellectual need of his students, he must have an in depth knowledge of mathematics and also love it. By loving mathematics, a teacher will strive always to put in his best to satisfy the intellectual needs of the students and enhances his own professional growth. To achieve this, mathematics teachers should endeavour to attend on regular basis workshop, symposia, conference and should read current journals on mathematics.

4.2. Mathematics teachers should have knowledge of methodology and techniques of imparting knowledge to his students

Having knowledge of subject matter alone does not guarantee quality delivery. For quality assurance, the teacher must be versed in both content and methodology. He must know the most appropriate method to use in different situations. He must be guided by factors such as the nature of learner, subjects, venue, availability of resources etc. Whatever methods he adopts, he should ensure maximum students' participation and active learning.

4.2 Mathematics teachers should have the knowledge of the students

He must have a profound knowledge of their state of physical, intellectual and psychological readiness, learning styles, likes and dislikes, wants etc. Adequate knowledge of students is useful in the area of classroom control and management and also in planning meaningful learning experience for them. It will also help to discover students' weak points in mathematics. And he can assist them individually according to their difficulties in mathematics.

5. Quality Assurance strategies for Teaching and Learning of Mathematics

- a. Only trained teachers who are specialist in mathematics should be employed to teach the subject in our schools especially in the primary and junior secondary school level.
- b. More emphasis should be placed on techniques/skills of improvisation of learning resources particularly with local materials in the training curriculum for would-be teachers.
- c. Newly employed teachers of the subject should be mentored, guided, monitored and counselled by the experienced and old teachers on the job.

- d. Exposing students to laboratory works and skills.
- e. Government should ensure regular and prompt payment of teachers' salaries as well as allowance to ensure dedication to duty.
- f. Suitable classroom and laboratory environment to be used for teaching the students.
- g. Provision of adequate funds for procuring learning resources by government and PTA.
- h. A call for an urgent crusade for massive production of quantitative and qualitative teachers for quality assurance in mathematics education through:
 - (i) scholarship for possible mathematics teachers in training
 - (ii) offer of automatic teaching appointment for best mathematics students on graduation in colleges.
 - (iii) Enhanced mathematics teachers allowance.

6. Conclusion

Quality assurance in mathematics delivery is indispensable to national development. It is a known fact that mathematics the queen of all sciences is the cornerstone for national development. The present over-whelming cry from parents and general public concerning students' poor performance in mathematics will cease if the inadequacies in mathematics delivery are addressed. The paper therefore calls for adequate attention to be given to quality assurance in mathematics delivery through proper implementation of the strategies given in this paper.

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Conveying the “Natural Beauty” of Chemistry

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Abstract

The major challenge that confronts undergraduate chemical education in US is the gap between the objectively high demands that learning requires and the subjectively low efforts that students make due to the lack of motivation. This poster reports strategies to ameliorate student learning in the following areas: application of friendly presentation, utilization of analogies and correlation with everyday life. The novelty lies in the attempt to incorporate new meanings into the existing platforms on publisher provided teaching resources by utilizing commercially available software tools. The poster aims to point out ways to effective knowledge delivery that can be implemented by other chemistry instructors. The goal is to make chemistry vivid and easy to understand in order to stimulate students' intellectual curiosity, which in turn leads to learning enhancement regardless of their career choices.

1. Introduction

Chemistry is a fundamental discipline that accounts for life at the molecular level. Nevertheless, chemistry instruction at undergraduate level faces the challenge that a majority of the students taking chemistry are neither motivated nor interested in this subject. Most students taking chemistry do not plan to pursue a career in chemistry. They take chemistry simply because those courses are prerequisites for degrees in fields of their interests, medical science or nursing for instance. Hence, lack of incentives is a profound obstacle to learning. On the other hand, chemistry contains an abundant amount of abstract concepts, which necessitates significant time and effort commitments from the students. The contrast between the low inputs and high demands results in unsatisfactory performance on the students' side and frustration on the instructor's side.

Although the motivation enhancement in chemistry career demands national efforts in terms of promoting science and technology, increasing job opportunities, improving salary dynamics etc., a student's interest is another motive that is not justifiable from an economic perspective. For example, kids can practice for hours in their spare time creating arts, learning music, or perfecting their skills in sports simply because they are interested in

those practices. Thus, chemistry instructors may also improve students' learning by inspiring students' interest. The question is that if chemistry is interesting? Ironically, the answer is “yes” only to a few chemists but not to the general public due to the adoption of tedious teaching methods in chemical education. Our goal is to show the interesting side of chemistry to our students and inspire their interest to learn even just out of interest regardless of their career choices.

2. Literature Review

Traditional approaches on how to improve chemistry teaching at the post-secondary level have been discussed in quite a few books in the area of achieving effective teaching and enhancing students' problem solving skills [1-4] and novel strategies come out every day in attempts to fill in the entirety [5-8]. However, not many resources address ways to show the vivid nature of chemistry. This poster reports several means of fulfilling this goal.

3. Methods

The three methods that we use within this research are discussed in Sub-sections 3.1, 3.2 and 3.3.

3.1 Use Friendly Presentation

Presentation is the heart of the teaching process. The best way of keeping students interested in chemistry is by presenting it in a vivid manner. Instructors may buttress the lecture with the combination of boards and audio-visual aids such as overhead transparencies, PowerPoint slides and videos, etc [5] that makes chemistry more alive and real to the students as our millennium students are mostly visual learners due to the image-centric, visual world in which they are raised. Students grasp the concepts better if they can picture them. Thanks to the development of computer-related technology, we are able to show pictures of everything, from a complicated cell to a tiny atom, to the students and make them have a more straightforward image in their mind. There is an increasing trend that textbook publishers nowadays provide JEGs, PowerPoint slides and transparencies of lecture outlines with the recent upsurge of textbook companion sites.

Despite their advantages, it is notable that there are two significant drawbacks to using overhead transparencies or PowerPoint slides directly comparing to traditional blackboard instruction.

- Enormous amount of material delivered per slide
- Notebook taking may interfere with listening

In traditional blackboard instruction, an instructor's writing speed sets the pace for students' knowledge process and notebook taking. If the instructor uses pre-made PowerPoint slides, the students may feel to be exposed to overwhelming amount of information at once. In addition, students cannot copy a slide while listening to the instructor's verbal comments and adding the comments and annotation accordingly at the same time. There are several ways to solve the above problems. Posting the lecture slides in advance is one of the solutions to the time constraint. Secondly, Microsoft PowerPoint has built-in "Custom animation" feature which enable us to display objects one at a time [9]. Although the above adjustments are very time consuming, the strategies are extremely rewarding.

3.2. Illustrate with analogies

Even the most abstract concepts in chemistry can be illustrated by examples or by analogies. It is beneficial to include as many analogues as possible to illustrate basic concepts in the lectures. It takes time to prepare but it is extremely rewarding. In this way, students are able to correlate sophisticated concepts in chemistry with easy to comprehend analogies. Figures 1-6 represent various examples of illustrations and analogies.



Figure 1. Illustration of an electronegative atom or group

The Figure 1 was used to illustrate electronegativity in general chemistry and the property of electron withdrawing groups in organic chemistry. The electronegative atom or group is shown as a cartoon character pulling a pair of electrons with the rope. The electrons are shown as red balls.

The Figure 2 indicated the nature of redox reactions in which electrons are donated from the reducing reagent to the oxidizing reagent. The

electrons are shown as red balls in cartoon characters' hands.

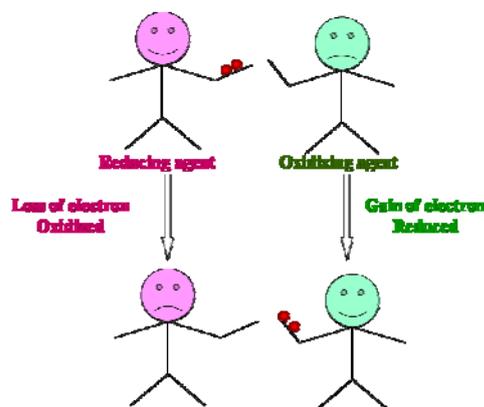


Figure 2. Illustration of the redox reaction

Electron delocalization is the origin of a variety of chemical concepts such as the size effect on acidity, the resonance effect on acidity, the source of aromaticity and the driving force of electrophilic aromatic substitution reaction, etc. We may draw an analogy between electron delocalization and mass distribution, which is more straightforward. The contrast in size between a fluorine atom and iodine atom is shown as an ant v. s. a human in Figure 3a in which lack of stability can be visualized through the fact that a cartoon ant carries an apple in a nerve-wracking way. Figure 3b demonstrates that electron delocalization stabilizes a species. The fact that a cartoon character finds it easier to carry two small bags of money than carrying all the money in one big bag symbolizes a resonance stabilized conjugate base in which the negative charge is shared by two oxygens.

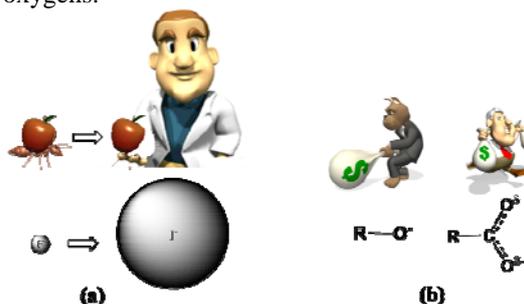


Figure 3. Illustrations of electron delocalization

The Figure 3(a) stability difference between a fluoride ion and an iodide ion. The atomic sizes are represented by an ant and a human, respectively. The electrons are shown as apples of the same size.

The Figure 3(b) stability difference between an alkoxide ion and a carboxylate ion. One big money bag represents one full negative charge on oxygen in an alkoxide ion while each of the two small money

bags represents that each oxygen in a carboxylate ion bears a one-half negative charge.

Michaelis-Menten kinetics [10] applies to a number of biological kinetic processes, such as facilitated diffusion, simple enzyme catalytic reactions. However, comprehending hyperbolic saturation pattern is a hard nut to crack for students. Figure 4 depicts the facilitated diffusion and its connection to an analogy. Think of carrier proteins as vehicles that carry passengers to the destination, and think of the passengers as transported species. If the number of vehicles stays still (i.e. two on the diagram), increasing the number of passengers will not increase the transport rate as only two passengers will be transported per ride and the rest of the passengers have to wait for their turn. Thus, the transport rate reaches saturation. It is easy for students living in the “country on wheels” to understand that when the passenger number is larger than the vehicle number, the number of passengers no longer determines the transport rate. The same analogy applies to simple enzyme catalytic reactions too.

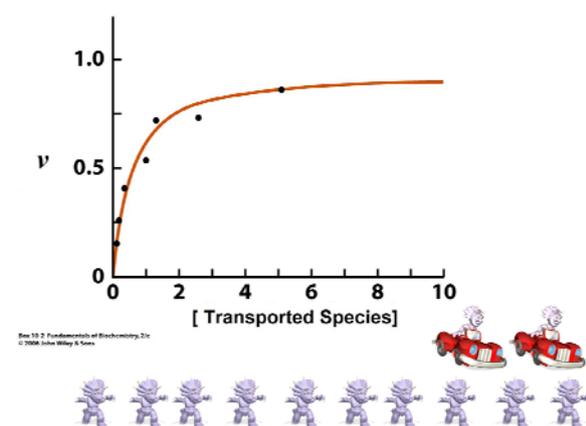


Figure 4. Illustrations of Michaelis-Menten kinetics in facilitated diffusion

The carries proteins are shown as red convertibles and the transported species are shown as dinosaur passengers, respectively.

3.3 Correlate with everyday life

Chemistry exists in every aspect of our lives. A good instructor should be able to connect the depth of the science of chemistry with its every-day-life importance. There are articles [1] and books about the chemistry of everyday life [2-4]. Table 1 summarizes a series of examples that I incorporate in my class.

Table 1. Selected everyday life correlated chemical concepts

Concepts	Everyday life Connection
Second law of thermodynamics	Why is it easy to stay messy while hard to keep neat?
Colligative properties	Why does salt melt ice?
Intermolecular forces	Why is oil liquid and butter solid at room temperature?
Geometric isomerism	Formation of trans fat in cooking oil
Stereoisomerism	What is the difference between Prilosec and Nexium?
Catalytic hydrogenation	Manufacturing of Margarine
Micelles	How does soap clean?
precipitate	What is soap scum?
precipitate	What is hard water?
Base catalyzed hydrolysis	How is soap made?
Acid catalyzed hydrolysis	How do drug-sniffing dogs detect illegal drugs?
Nucleophilic addition and elimination	How does penicillin work?
Chromic acid oxidation	How do breathalyzers work?
Hydrophobic effect	When do small oil drops in water tend to gather together into larger ones?
Oligosaccharides and antigen-antibody complex	What role do blood types play in blood transfusions?
Isoelectric point	How is cheese made?
Protein primary structure	How do meat tenderizers work?
Protein primary structure	How different is human insulin from porcine insulin?
Protein tertiary structure-disulfide bond	What is involved in a “hair permanent”?
Protein Denaturation	Why does alcohol sterilize things?
Protein Denaturation	Why must we wear goggles in the lab?
Recombinant DNA	How is real human insulin made?
Myoglobin	Why is beef red while fish white?
Enzyme specificity	How is it possible that humans cannot digest grass while cow can?
Enzyme specificity	What causes lactose intolerance?
Coenzymes	Why are vitamins necessary

	for our health and how do they work?
Competitive inhibition	How do sulfonamides fight bacterial infection?
Noncompetitive inhibition	Why are heavy metals a Hazard to your health?
Irreversible inhibition	How does penicillin fight bacterial infection?
DNA replication	Why kids look like their parents?
Western blotting	How is HIV detected?
PCR	How is HIV detected?
Gene mutation and chemical mutagens	Why is roast meat bad to your health?
Gene mutation and radiation mutagens	Does suntan cause cancer?

4. Results and Discussion

The above strategies are proven to promote effective learning. As a result, the students in my class express their satisfaction with my teaching style by giving me high marks in student evaluation and by the substantial progress they make. One of the students in my introductory chemistry class said commented "It is very obvious that Dr. Wu wants her students to succeed in this course, not only by making it easy, but also by staying in tune with the students". One commented, "The way she presented the material, made even the more difficult material understandable".

In order to compare our students' chemical knowledge competency to a national norm, the standardized exams produced by the American Chemical Society's Exam Institute were administered as the final exams. The average score on the organic chemistry exam increased by 16 percentage points from 2008 to 2009 with the highest score of 69% (the national average is 50 %). In Biochemistry, our students, scoring average of 37 out of 60, exceeded the national average (35 out of 60) in 2009 and thus, exceeded the nationally identified benchmark for this exam. This definitely speaks well to manner in which I teach in my class and the ability of our students to compete. Odd enough, the two students from my freshmen chemistry class in 2006 lobbied at Burglar King to ban Trans-fat upon learning geometric isomerism and *cis-trans* conversion at high temperature. I am very grateful for the cooperation and enthusiasm from my students.

5. Conclusions

In general, inadequate conceptual understanding is one of the common obstacles that college students

taking chemistry faces. This situation is exacerbated by the lack of incentives and interest. It is the instructor's responsibility to make chemistry vivid and understandable to attract the interests, which in turn leads to learning enhancement. Hence, lack of incentives and interest are profound obstacles to learning. The goal is to make chemistry vivid and easy to understand in order to stimulate students' intellectual curiosity, which in turn leads to learning enhancement regardless of their career choices.

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A study of peer victimization among secondary school students in Osun State, Nigeria.

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Abstract

The study investigated the types and prevalence of peer victimization among secondary school students in Osun State. This was with a view to improving peer relationships among secondary school students. Survey research design was adopted for the study. The population for the study consisted of junior secondary school students in Osun State. Multidimensional Peer Victimization Scale was used to elicit information on the types and prevalence of peer victimization. The result showed that four types of peer victimization were experienced by the students and there was high prevalence of peer victimization among school going adolescent. These types were widespread among secondary school students. The study therefore concluded that peer victimization was a recurring problem among secondary school students and could be reduced through appropriate counseling of students.

1. Introduction

Violence cuts across generations, it affects every segment of the society and it is particularly common among school-going adolescents. Peer victimization as an important aspect of school violence makes the students to be fearful of school and inhibits their learning potentials. It is a serious problem for school age children and for which they receive limited adult help. Researchers have shown that violence is used in response to conflicts and it is common among adolescents [3], [10]. Violence in whatever form usually results in problems like student's protest or unrest.

Peer victimization can be seen as the experience among children of being a target of aggressive behaviour of other children who may not be siblings and necessarily age mates [6]. According to Smith, the act was described as an unprovoked attack that causes hurt of a psychological, social or physical nature [13]. Olweus also described peer victimization as a problem that occurs when a student is exposed repeatedly and overtime to negative actions on the part of one or more other students [11].

It could be deduced from the definitions that peer victimization is not a problem that could be left unsolved. Therefore urgent attention needs to be focused on this matter.

At times, the perpetrator willfully and unconsciously desires to hurt another student and put him/her under tension. The tension is caused not only by what actually happens but also by constant fear of what might happen.

Peer victimization can be classified into four types [8]. These are physical victimization, verbal victimization, social manipulation and attack on property. These types of peer victimization with their associated behaviours tend to inhibit learning potentials and create interpersonal problems for victims [12].

Many factors could be attributed to the issue of peer victimization, firstly, schools bringing together large number of students from different backgrounds that have been reared in widely varying ways. Sadly some children are aggressive because they have been unconsciously taught at home by their parents or siblings that intimidating and verbally abusing others are the best means of getting their own way and these sometimes work [5]. In secondary schools peer victimization constitutes a major problem that makes the students fearful of school because of the kind of harassment they experience from their peers. When this kind of problem happens in schools, it impedes the productivity of teachers and students' performance. This problem has fast becoming a normal part of childhood experience which Nigerian children must learn to tolerate as part of the process of growing up [9]. However, this hardly recognized as a problem but, because of its possible influence to negate the learning process, it has become a legitimate problem for empirical investigation.

Morrison opined that peer victimization in schools is a global problem that can have negative consequences for the general school climate and for the rights of students to learn in a safe environment without fear [7]. However, there is dearth of information on the types and the extent of prevalence of peer victimization among secondary school students in Osun State. Information is also lacking on the most appropriate administrative and counseling strategies required to manage the negative effects of peer victimization.

2. Purpose of the study

The purpose of the study is to investigate/determine the types and frequency peer victimization among secondary school students in Osun State. Specifically, to describe each type of peer victimization, identify factors which inform such violent behaviour and then relate both the types and frequency of peer victimization to the teaching and learning processes in the classroom.

3. Theoretical Framework

The complex nature of aggression and the behaviour associated with it, how this behaviour is learnt and reflected among students in the school learning environment show that one single theory cannot adequately account for a study on aggressive related behaviour and its impacts. Consequently, the theoretical framework for this study is a form of an eclectic theory of aggression which combines the biological and psychological origins of aggression with social learning theory.

According to Berkowitz, human beings by their nature are biologically, psychologically and socially prone to aggressive impulses to which they respond [2]. The willingness or not to respond and the appropriateness and the extent of such responses to aggressive impulses are functions of past social learning experiences and related environment factors. In this case, a combination of Dollard and Berkowitz concept of aggression and Bandura social learning theory provide the theoretical framework for this study. Berkowitz and Dollard et al. suggest that individuals who are frustrated, thwarted, annoyed or threatened will behave aggressively since aggression is a natural, almost automatic response to frustrating circumstances [4],[2]. Aggression is always a consequence of frustration. Atimes, people respond to frustration and anger differently depending on their biological constitution, family background and the impact of social learning.

Another component theory of aggression is Bandura's social learning theory. In this theory, human beings adapt, learn and maintain behaviour patterns that have worked in the past even if they worked occasionally. This learning process begins in early childhood. Children develop many complex behaviour including aggressive ones merely by watching their parents and significant others in their communities and school environment through a process called modeling or observational learning. A child's aggressive behaviour pattern, therefore, is often acquired through the modeling or imitation of other people, real and imagined in the child's environment. Victimization observed among secondary school students is assumed to follow this pattern of behaviour that is learnt from others

reinforced or rewarded and practiced on fellow students in schools [1].

4. Procedure

Survey research design was used in this study. The population consisted of junior secondary school students in Osun State. One thousand five hundred students were selected by stratified random sampling technique using class level (Junior secondary school I-III) as strata. Fifty students were randomly selected in each Junior secondary school, hence a total of 150 students from each of the 10 selected secondary schools. In other words 1,500 students were used in this study. The adapted version of the Multidimensional Peer Victimization Scale was used to collect data for this study. This scale consisted of the items designed to elicit information on the experiences they had of being hurt by their mates or friends in school. Multidimensional Peer Victimization Scale (MPVS) was developed and validated by the [8]. The items in the original MPVS were intended to find out the extent to which students were victimized by their peers. The original 16 items by the authors were adapted and validated. Four items were added to the original MPVS to meet the purpose of this study. The items covered four aspects of peer victimization, namely, physical victimization, verbal victimization, social manipulation and attack on property. The instrument was administered to all the students. The students were required to indicate how often they were victimized over a range of 0-2, (0= Not at all, 1= Once, 2= More than once).The items were found to possess satisfactory internal reliability with values of 0.85, 0.78, 0.77 and 0.73 for physical, verbal, social victimization and attack on property subscales respectively [8]. Scores of each of the respondents on the total scale have a possible range of 0-40 and possible range of 0-10 on each of the four subscales. Scores between 0-18 indicate a low level of victimization, 19-26 indicate moderate level of victimization, while scores between 27-40 showed a high level of victimization. Descriptive statistics were used to analyze and interpret the data obtained in the study.

5. Analysis of Data

To determine the types of peer victimization among secondary school students, data collected from the administration of the multidimensional scale were subjected to descriptive analysis. The Table 1 summarizes the responses of the students on the types of victimization they have experienced as indicated on the returned questionnaires.

Table 1. Types of Peer Victimization among secondary school students

S/N	Items	Not at all		Once		More than once		Undecided	
		No	%	No	%	No	%	No	%
1.	Pinched me	515	36	324	22.5	580	40.5	12	.8
2.	Tried to get me into trouble with my friends.	562	39.3	398	27.8	447	31.2	24	1.7
3.	Called me names	387	27.0	319	22.3	689	48.1	36	2.5
4.	Took something of mine without permission	481	33.6	402	28.1	548	38.3	0	0
5	Kicked me	550	38.4	511	35.7	358	25.0	12	.8
6.	Turned my friends against me.	581	40.6	305	21.3	507	35.4	38	2.7
7.	Made fun of me because of my appearance.	528	36.9	307	21.5	560	39.1	36	2.5
8.	Slapped me.	690	48.2	355	24.8	386	27.0	0	0
9.	Tried to break my things.	620	43.3	573	40.0	238	16.6	0	0
10.	Injured me physically	468	32.7	540	37.7	423	29.6	0	0
11.	Refused to talk to me.	891	62.3	195	13.6	295	20.6	50	3.5
12.	Stole something from.	293	20.5	394	27.5	732	51.2	12	.8
13.	Beat me.	383	26.8	319	22.3	729	50.0	0	0
14.	Made other people not to talk to me.	680	47.5	393	27.5	358	25.0	0	0
15.	Laughed at me.	568	39.7	335	23.4	528	36.9	0	0
16.	Deliberately damaged my property.	791	55.3	384	26.8	208	14.5	48	3.4
17.	Swore at me.	319	22.3	290	20.3	786	54.9	36	2.5
18.	Shouted on me.	532	37.2	455	31.8	420	29.4	24	1.7
19.	Made me feel irritated.	311	21.7	437	30.5	659	46.1	24	1.7
20.	Hijacked my properties.	441	31.1	350	24.7	616	43.4	12	.8

The physical victimization (items 1, 5,8,10 and 13) experienced by respondents show that (item 13) was the most frequently used with 72.3% of the respondents indicating that they have been beating once or more times. This is followed by (item 10) in which 67.3% of the respondents indicated that they have been injured one or more times, furthermore, 63.0% of the respondents indicated to have been pinched. As shown in Table 1, the social victimization (items 2,6,7,11,14,15,19) experienced by the respondents was led by (item19) in which 76.6% of the victims indicated that they were made to feel irritated one or more time, more so, 60.6% and 60.3% respectively have been made fun of because of their appearance(item 7) and laughed at (item 15). Furthermore, Table 1 revealed that verbal victimization (items 3, 17, 18) frequently takes place among secondary school students as more than 60% of the respondents indicated to have experienced the items that made up verbal victimization on the Multidimensional Peer Victimization Scale. 75.2% have experienced being swore at (item 17), 70.4% have experienced being called names (item 3) and 61.2% indicated to have experienced being shouted on. It could also be observed in the Table that students also experienced attack on property (items 4, 9, 12, 16, 20). Over seventy-eight per cent of the respondents indicated that other students have once or more stole their things (item 12), this is the highest among the items that made up attack on property as well as the highest among the entire items that up the Multidimensional Peer Victimization Scale.

In order to determine whether or not subjects were subjected to specific forms of physical violence within the last one year, their responses to Part 1a of the Multidimensional Peer Victimization Scale were

analyzed with emphasis on their gender, age, class and personality.

Table 2: Prevalence of Peer Victimization among secondary school students

Variables		Have you been victimized in the last one year?			Total
		Yes	No	Undecided	
Gender	Male	341 (59.7)	225 (39.4)	5 (0.9)	571 (39.9)
	Female	506 (58.8)	345 (40.1)	9 (1.0)	860 (60.1)
Age	9-12yrs	235 (60.9)	151 (39.1)	0	386 (27.0)
	13-14yrs	261 (61.3)	161 (37.8)	0	426 (29.8)
	Above 14yrs	351 (56.7)	258 (41.7)	10 (1.7)	619 (43.2)
Class	JSS1	366 (61.4)	226 (37.9)	4 (0.7)	596 (41.6)
	JSSII	275 (57.9)	191 (40.2)	9 (1.9)	475 (33.2)
	JSSIII	206 (57.2)	153 (42.5)	1 (0.3)	360 (25.2)
Personality	Extroversion	824 (59.4)	552 (39.6)	14 (1.0)	1394 (97.6)
	Introversion	17 (48.6)	18 (51.4)	0	35 (2.4)

The analysis shows that more than 50% of the respondents have experienced one form of victimization in the last one year. When one considers the gender and the rate of peer victimization in the study it could be observed that only 39.4% and 40.1% of male and female respectively have not been hurt or experienced pain as a result of what other students did to them. Also, considering the rate of victimization across student's age, it is revealed that 39.1% and 37.8% of students within the age bracket of 9-12 and 13-14years have not been hurt or experienced pain from their fellow students. The students who are above 14years even though more matured still experienced victimization from their fellow students. Only 41.7% of the subjects that have not been hurt or experience pains in the last one year from their fellow students. While considering the rate of peer victimization across student's class and personality, Table 1 revealed that apart from the introverts with 51.4%, who indicated not to have been hurt or experienced pains from fellow students more than 50% of the respondents across class and personality have been hurt or have experienced pains from fellow students. Therefore,

the result showed that the prevalent rate of peer victimization among secondary school students in Osun State is high.

The findings of this study indicate that there were at least four types of peer victimization among secondary school students in Osun State. It was shown that the rate of peer victimization is high among the students and the rate at which these students were being victimized with regards to the types of peer victimization is educationally worrisome as it suggests the existence of a serious problem that is likely to have long term effects on the student's emotional and social development and by logical extension impact negatively on the social and psychological wellbeing of the students. Peer victimization is a serious issue that requires the immediate attention of school authorities at local, state and national levels as the phenomenon affects the academic ability of the students. It is possible that school administrators are unaware of the magnitude of this problem in the school. If unchecked, the different forms of victimizations can graduate to more serious forms of aggression and violence including cultism thus providing a fertile ground for breeding cultists among students in secondary schools implication of such on teaching, learning and general administration of the school can only be imagined. Peer victimization can prevent the implementation of many development programme involving young school students.

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**Session 6B: Cross-disciplinary areas of Education,
Mathematics Education, Geographical
Education, Science Education**

Students' Self-editing Attitudes and Practices in L2 Writing Tasks
(Violet Lunga, Daniel Kasule)

Measurement of Students Counselling Satisfaction at the University Level in Jordan
(Mohammad Olimat)

The Proving Patterns and Conceptualizations of the Nature and Role of Proof in School
Mathematics: A Pilot Study on Freshmen and Senior Teaching Mathematics Students
(Yeşim İmamoğlu, Ayşenur Yontar Toğrol)

Breaking the Culture of Silence in Parent-Child Sexual Communication in a Nigerian Community
– Baseline Data for Intervention (Ojo Olubukola Olakunbi, Akintomide Akinjide Ganiyu)

Education of a Human Being as a Problem of Life Space Self-Organization
(Irina O. Loginova)

Integrating Physical Education in Omani Basic Education Curriculum: Luxury or Necessity
(Majida Mehana, Hashem Kilani)

Students' Self-editing Attitudes and Practices in L2 Writing Tasks

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Abstract

We survey the self-editing attitudes and practices of seventy university students using a questionnaire and text analysis. Instruction in self-editing did not minimize errors in a three-week take-home assignment students submitted. We therefore argue that as novice writers, students are neither positioned as knowledge creators; nor as participants; nor as co-researchers; and that although teaching the writing conventions helps in eventually producing independent L2 writers who self-edit, we suggest that these conventions be taught within a socio-cultural context as discourse practices rather than as autonomous skills. Conceptualizing writing as discourse and therefore as social practice leads to an understanding of writers as socially-situated actors; repositions the student writer as an active agent in knowledge creation; and is central to student-centred pedagogy. We then recommend that additional error feedback mechanisms namely peers, the lecturer, and the computer, increase students' self-editing practice.

1. Introduction

Students expect lecturers to correct their written work. Conversely, lecturers expect students' texts to be error-free. The lecturers' expectation is that over the years of their education, students have learnt what constitutes correctness and can self-edit without further instruction and that self-editing has become a habit applicable at any given opportunity to produce consistently error-free work. As writing instructors, we view self-editing as central to learner-centred pedagogy that can be facilitated by socio-cultural perspectives to L2 writing [10] which place the student as an active agent in knowledge creation. Using our experience as teachers of a university writing course, first we explore students' existing attitudes towards self-editing. We then go on to investigate their self-editing practices in two samples of their writing. We identify possible reasons for these attitudes and practices before making recommendations.

2. The gap in L2 writing research

Much research in this area is on whether teachers should correct errors in student writing, how they should go about it, and whether teacher feedback has any effect on students' writing proficiency. Findings have been inconclusive and so, the debate rages around the question whether or not teacher's error feedback makes a difference. Over the past ten years the debate has featured two names: Truscott and Ferris. The former argues that error feedback in L2 writing is counter-productive as it detrimentally affects learners' writing development and that it has not improved students writing [9]; while the latter argues that error feedback can improve language accuracy over a period of time [3]. Regardless which side one takes in the argument, we feel that this controversy can be attributed to classroom culture and power where it will always be the teacher who will decide the topic and how it should be discussed; and that students are limited to producing a text for evaluation, but are not motivated by a genuine interest in the topic.

ESL students' editing for sentence level errors have been studied [8]; and so has the editing and correction strategies of much younger bilingual children [4]. Additionally, several writing manuals mention self-editing and the internet is replete with checklists for achieving this. We however feel that students' self-editing attitudes and practices have received relatively little attention. We do not know exactly how author-correctable errors end up in students' texts.

Self-editing is extremely important in the era of electronic communication because clicking "send" or "print" before attending to possible errors in form, content, and organization can be a source of irreversible shame or annoyance between writers and their readers. Promoting self-editing practices therefore has life-long relevance for today's university student. It is also important in reducing the teachers' workload. More importantly, enhancing student self-editing capacity eliminates the culture of over-dependency on teachers enabling the teacher to

assume the role of a facilitator, co-learner or collaborator [1] during the writing process.

Our operational meaning of '*self-editing*' is the writer's ability to identify and attend to textual inaccuracies and loss of clarity in content, organization, and mechanics. Following online and dictionary searches, 'self-editing' was preferred to 'proofreading' because proofreading is limited to the processes of identifying and noting the errors without proceeding to eliminate them which self-editing entails. 'Self-editing' was also preferred over 'self-correction' because 'self-correction' involves students' ability to correct their errors marked by teachers [1].

3. The Advanced Writing Skills Course

The Advanced Writing Skills course at our university is offered to second-years and above and is taught mainly from a process approach. However, the course outline allows eclectic approaches based on composition theory and the choice and inclination depends on individual lecturer preferences. For example, elements of Current Traditional Approach are reflected in the emphasis on assessment of a final product on the basis of its adherence to the writing conventions; and in the idea that there is a standard academic essay, the Researched Essay, towards which students must conform. Additionally, students are exposed to the different genres and conventions governing essay types, for example, narrative, descriptive, exposition and argument reflecting a genre approach to literacy. There are also elements of Cognitivism as shown by the focus on the thought processes the students should follow in an almost formulaic manner: prewriting, writing, and revising. For example, when students are writing their researched essay, they are encouraged to discuss their notes, background reading, personal inclinations to the topic, the problems they encounter as they go through the process of writing the researched essay, and how they can overcome them. These discussions are meant to clarify students' thoughts during the writing process. An Expressivist approach is reflected in free-writing tasks, brainstorming activities, autobiographical pieces and reflective writing exercises which also constitute the course's continuous assessment (CA).

Recurrent errors in our students' work tend to indicate that: (i) Students do not self-edit their texts; (ii) They do not appreciate the value of self-editing; and that (iii) They are used to traditional approaches of teaching where the teacher represents the correct model and must therefore correct their work. Given these

concerns, the study tries to answer the following research questions:

1. What are students' attitudes towards self-editing?
2. Do students self-edit their written work?
3. Does guided self-editing make a difference?

4. Methodology

Using a questionnaire, the study explored university students' self-editing attitudes in order to see whether students knew that self-editing improves textual quality. Thereafter text analysis performed on select samples verified students' self-editing practices.

4.1 Procedure

The questionnaire initially piloted on first-year students, collected respondents' personal characteristics (age, gender, home language, year and faculty of study) and opinions on self-editing. After administering the questionnaire, we discussed a guideline on self-editing procedures consisting of ten common errors with each class. In a following lecture, respondents wrote a paragraph titled "Good study habits" using a common outline; and were required to self-edit using the guideline. We randomly selected ten texts for analysis. Thereafter, we repeated the activity by assigning a three-week take-home essay of four or five paragraphs from a choice of topics. During the three weeks they were free to conference individually with the lecturer regarding the content and organization of their essay. As a motivator, we made the essay a component of CA. Again ten texts were sampled for analysis.

5. Findings from the questionnaire, the paragraph, and the essay

We first report the findings from the questionnaire (5.1) regarding *students' attitudes to self-editing* before reporting the findings from the one paragraph (5.2) and the essay (5.3) where we verify *students' self-editing practices*.

5.1 Findings from the questionnaire

Seventy students, 23 males and 47 females, responded to the questionnaire and wrote the two tasks. Thirty-six respondents were from the Faculty of Social Sciences, twelve from Humanities, eight from Education, seven from Science, four from Health Sciences, two from Business, and one from Engineering. Some of these faculties place high demands on student

essay writing. The sample included forty-two second years, twenty-three third years, and five fourth years. Respondents' ages varied widely: fifty-two respondents were below twenty-five indicating that they left senior secondary school less than five years ago implying that their familiarity with academic writing was more recent than the few who were over thirty. The students were a very complex multilingual group whose home languages included: *Setswana* (37 respondents), *Kalanga* (3), *Sebirwa* (3), *Hindi* (1), *Ndebele* (1), *Setwapong* (1), and *Herero* (1). Some spoke a combination of two or more home languages, namely: *English and Setswana* (14), *Kalanga and Setswana* (6), *English and Sekgalagadi* (2), *Setswana, Afrikaans and Herero* (1). Despite this home language diversity, the sample received an English language school experience that exposed them to basic academic writing conventions.

It is also claimed elsewhere that more successful peer interactions come from students who share a common language and cultural expectations than from students in heterogeneous cultural groupings [7]. However, to the open-ended question '**Do you ever ask a friend to edit your work before you submit it?**' which related to peer-editing, only 34 respondents said they did. While they saw the value in peer editing, many saw it as merely a mechanical way to: '*see if I have any mistakes*'; '*find each and every mistake*'; '*see mistakes I overlooked*'; '*be corrected by somebody*'; '*identify errors you the writer cannot see*'; and '*correct construction of words and spelling*'. One respondent wanted to '*ensure that the work is readable*'. These comments suggest that editing is only associated with their overemphasis on local, surface-level components and ignorance of global structures of texts. When the reader's primary aim is to spot errors, the attitude conveyed is that the original purpose of academic writing is not a genuine concern to understand something. Instead it is an opportunity for the reader to judge the degree of adherence or divergence to the conventions; and for the writer to display awareness of linguistic and textual features; and that the form rather than the message is at the centre of writing.

Evidently, peer-editors mainly focus on the mechanics, and not on content and organization of ideas. However, this help was sometimes not sought because, as several respondents put it, '*there was no time to show your work to a friend*'. The thirty-six respondents who said 'no' to peer-editing gave reasons that indicated that they doubted if their peers were skilled any better than they were themselves. Peer-editing was also viewed with suspicion reflecting the competitiveness students attach to texts

submitted for assessment and for that reason they were worried that peer-editing might result in '*plagiarizing my points*'; or '*copying from me to improve their work and get higher marks*'; or even '*friends making fun of your mistakes*'; or worse still '*missing submission deadlines*'. In their view, friends are expected to show their 'goodness' in assessing what a friend has written; thus one respondent argued that out of modesty, friends may not do a thorough job of editing because '*they don't want to disappoint you*' which may portray them as bad friends. Reluctance to be critiqued or to critique peers may be linked to the Tswana cultural philosophy of '*botho*' which means compassionate and caring. One study attributed peer editing practices among Chinese learners to the Asian collectivist culture [2]. The same study identified additional factors relevant for our respondents too, namely: mutual status inequality, teacher's comments, peers' aggressive and defensive manners, and trustworthiness of peers' language proficiency. These are major factors responsible for the unpopularity of peer editing.

The question '**Do you think writers are able to self-edit their work themselves?**' sought respondents' perception of themselves as autonomous writers and as members of a writing community capable of self-editing. All their responses gave the attitude that self-editing is difficult, ineffective, and complex. In their view, they had not attained the status of 'writer' to be able to overcome these difficulties. Indeed many self-editing online manuals convey a similar view. Three such responses expressed the confounding nature of self-editing as follows: '*yes, writers are able to self-edit their work but it is quite difficult because we tend to believe that we did everything correctly, thus defending our work*'; and '*because it is your work, you will understand it your own way, and some mistakes you will not identify*'; and '*they [writers] can [self-edit] and maybe not, because sometimes when you think you are reading what is written, in fact you are saying what you thought you were writing*'. Because these respondents did not position themselves as purposeful communicators, they often failed in their attempt to communicate meaning to their readers probably as a result of the doubts they hold about their capabilities to do so.

We further sought to know respondents' thoughts regarding the importance of self-editing by asking the question: '**What in your opinion is the importance of self-editing to the text writer?**' Respondents agreed that self-editing was an important part of writing because: '*you [the writer] are the one who knows what you want to say and it will be difficult for another person*

who does not know what you want to say to do that for you'; 'work with lots of mistakes turns off readers'; 'I have realized how much I make mistakes when writing after I had my exercise marked'; 'bumping into someone's editing mistakes is irritating'. One respondent lamented its omission in early education: 'it is a bit difficult for most to grasp this concept [self-editing] because from elementary school we were taught in such a way that the teacher has to be the identifier of mistakes instead of us communicating through our writing'. Another suggested that 'time should be made for self-editing in exams and tests like probably after the test duration has lapsed'; while yet another suggested 'maybe we can write our academic papers via a computer as it easily picks up errors'.

Respondents' attitudes to self-editing can be summed up as inappropriate for creating communicatively effective written texts: the attitudes reflected suspicion of the readers' intentions (even when that reader was a friend); reflected an inaccurate purpose for writing, and conveyed the students' feelings of inadequacy as writers.

After the questionnaire, the guideline on self-editing was discussed in class before the two writing activities reported below were given.

5.2. Findings from the sample of ten paragraphs

Findings from the paragraph written in class indicated that on the whole the guideline on self-editing minimized only the occurrence of errors in spelling and punctuation. There were persistent subject-verb agreement (SVA) errors e.g. 'Good student have a very good habits' appeared in three samples. This may be attributed to the fact that, though in point form, the outline was typed. From our experience with students, typed communication has an elevated status in students' view and enjoys unquestioned correctness; hence in their typed point form, the contents were accepted as grammatically well-formed. Also equally prevalent were problems in combining sentences to create cohesion and conciseness, perhaps attributable to insufficient time since the paragraph had to be submitted at the end of the one-hour lecture.

Another problem was poor sequencing of the writer's thoughts. For instance, in one case what began as general guidelines (*Good study habits involve...*) abruptly became instructions of what a good student ought to do (*Review notes after class. Start early on an assignment*) without warning. Another sample exhibited problems with the basic structure of a paragraph because

the writer merely reproduced the outline ideas separated by full stops and capital letters resulting in a string of strange sentences that had no subject: 'Presents notes in a specific format that is easy and clear to read e.g. date, page, numbers and information. Uses a pencil or different ink for definitions [sic] or questions. Visits lecturer in the office' etc.

Our expectation had been that using the guideline provided, this paragraph would be completely error-free.

5.3. Findings from the sample of ten essays

The analysis which included five handwritten and five typed essays focused on the presence of author-correctable errors. The essays were on the following topics: *Should smoking be banned in public places?* (3); *Discuss the advantage and disadvantage of a United States of Africa* (1); *Discuss the concept of globalization in the context of your country* (2); *The advantages and disadvantages of technology* (1); *The role of agriculture in the your country's economy* (1); and *Critically examine the characteristics of an effective leader* (2). Samples exhibited the folly of student writers that long essays score higher, no matter what the contents! Thus, the required maximum of five paragraphs was exceeded: two students had twelve and eleven typed paragraphs respectively; one produced ten handwritten ones; while another saw nothing wrong with using font 14 and a bulleted format for the essay. Although exceeding the limit did not constitute an author-correctable error, the manipulation that goes with forcing essays to become long further confirms the misunderstood purpose of academic writing. The others, including those that had sections lifted verbatim from the internet, had paragraphs that were short, disjointed, and poorly demarcated from each other just to create textual length. One essay had well-formed paragraphs but the contents were lifted verbatim from the internet. Table 1 summarizes the analysis with the author-correctable errors italicized verbatim in the second column.

As Table 1 shows, none of the essays analyzed showed evidence of careful self-editing. This poor performance was difficult to justify given that this was a three-week take-home task involving lecture activities dealing with self-editing; an opportunity for individual conferencing with the lecturer; and the task contributing to one's CA! Our assumption that the class had been 'empowered' to determine correctness was not borne out by what they wrote.

Table 1. Incidences of author-correctable errors in essay samples

Sample	Self-correctable error
Sample A: Topic: Globalization [6 short handwritten paragraphs]	(i) Cited sources undated (ii) No paragraph topics, e.g. one beginning with <i>exploitative diamond pricing globally ends with pollution of the environment as people move around and some copy other cultures leading to cultural decay.</i>
Sample B: Topic: Leadership [10 short handwritten paragraphs]	(i)No SVA in 1 st sentence: <i>A leader is someone who lead the group, can either be a club, or even society;</i> (ii) Incompleteness: <i>According to Ricky whose view is that a good leader is a person who can be trusted.</i> (iii)Structural mix: (1) <i>This displays that a person have confident in others that they could/can do the job delegated to them.</i> (2) <i>A good leader, at times, he/she need to sacrifice their personal comforts .</i> (3) <i>People appreciate a leader who can admit his/her mistakes but if keep making mistakes all the time people lose faith in your competence.</i>
Sample C: Topic: Leadership [6 handwritten paragraphs]	(i)Parallelism: Honesty and trustworthy (ii)Structural mix: (1) <i>In contrary Redd argues...</i> (2) <i>In conclusion characteristics of a good and effective leader amongst others include trustworthy, he must be loyal and trusted to lead the team to the intended result.</i>
Sample D: Topic: Smoking [5very long handwritten paragraphs]	(i)No SVA in 1 st sentence: <i>Cigarettes contains a substance called tobacco.</i> (ii)No acknowledgement of sources; hence few errors
Sample E: Topic: Smoking [5 handwritten paragraphs]	From the Internet (hence the few errors) e.g. the author is not aware that context the contexts differ.
Sample F: Topic: Technology [11 typed paragraphs]	(i) Structural mix: <i>According to Chan argues that...</i> (ii)Omission: <i>A live example would of First National Bank</i> (iii)Pronoun misuse: <i>These [who?] have received more market</i>

	<i>attraction</i> (iv) Readers misled e.g. (1) brackets used wrongly in: <i>(Lancaster 1995) supported this advantage</i> (2) saying the author contests the first, whereas they concur (3) using 'the following' but no list follows
Sample G: Topic: Globalization [12 short poorly demarcated typed paragraphs]	(i)Run-on sentence: <i>To address the twelve critical areas of concern highlighted by Beijing platform for action we chose six critical areas for development of action oriented strategies to remove gender inequalities and four of them were; women and poverty including economic empowerment, women power-sharing and decision making, violence against women and human rights and the protection of the girl child.</i> (ii)Sentence fragment: <i>Violence against women including their human rights remaining as a problem.</i> (iii)Spelling errors
Sample H: Topic: Smoking [8 paragraphs in font 14 bulleted & indented]	Sources unacknowledged and because it is lifted, errors are minimal
Sample I: Topic: A United States of Africa [7 disjointed typed paragraphs]	(i) Meaninglessness resulting from run-on sentences: <i>It will bring to an end tribalism which was brought by European's post colony which resulted in Africans who mixed with Europeans genetically looked down on African Africans hence the Hutu, Tutsi genocide, Somalia war, Sudan's Darfur war. European's post colony; post-colonial countries; there will be technocratic erasure of the political; already some nations know where that are perceived to fall.</i>
Sample J: Topic: Agriculture [8 well-formed paragraphs]	Run-on sentence: <i>in commercial farms people are employed as machinery operators, accountants, the BMC also employ a relatively large number of people.</i>

6. Discussion of findings

The results of this study showed that students lacked the confidence to determine the accuracy of their expressions, a sentiment conveyed in their responses to the questionnaire.

There are three possible explanations for this. Firstly, students perceive the lecturer as the model of correctness; a view advanced by the genre approach to literacy. By rewarding correct use of the conventions of linguistic and textual features, the lecturers' feedback reinforces the students' approach to self-editing. Unfortunately, the ideal model remains obscure to students either because lecturers do not model or their models are not readily accessible to students. One way to overcome this is by writing along with the students to enable them recognize the linguistic and textual features to copy. However from a poststructuralist interpretation of writing, such ideal models (or 'genres') fail to produce autonomous writers. This may explain why this student sample failed to self-edit because instead of the provided guideline serving as an enabler, it acted as a means of containment leaving them domesticated [6] by the requirements of each of the writing activities demanding argumentation or exposition skills.

Secondly, to students, academic writing is a representation of their received knowledge over which they have very little control and cannot be active participants in its construction. Because most academic discourse is transmitted in writing and the lecturer's explanation is also based on the same written sources, students become passive recipients of received knowledge, lacking confidence to critique themselves and their sources of that knowledge as implied by self-editing. As writers, students do not position themselves as co-researchers or as creators of new knowledge [6], a situation confirmed by their responses to the questionnaire. Traditionally, education positions students as subordinate receivers. A subordinate role encourages students to "... regurgitate knowledge that is deemed essential in a format that is sanctioned by their discipline" [5]. Of the ten samples analyzed, five exhibited this handicap either in their total reliance on what they downloaded from the internet (Sample D, E, G, I) or on lecture notes (Sample H and I). We suggest that self-editing can be facilitated by socio-cultural perspectives to L2 writing which place the student as an active agent in knowledge creation.

Thirdly, students view the purpose of academic writing merely as an evaluative tool that determines pass or failure; a view perpetuated by the absence of a real audience

beyond the lecturer who chose the topic(s). In their quest to score high marks, textual length had to be manipulated in the different ways narrated. Although not the subject of this study, student reactions to the lecturers' feedback, focused solely on the mismatch between the length of their essay and the mark it earned.

6.1. Socio-cultural perspectives and metalinguistic awareness

Increasingly, the field of L2 writing has come to consider the role of culture and identity in language learning and the role of the student as an active participant in the writing process. From a perspective of L1, writing conventions were seen to be domesticating and limiting because they discourage subjectivity [6]. However, the important question for L2 writing instruction is 'what do students benefit, as writers, from a genre approach to literacy'? The textual inaccuracies in mechanics, organization, and content, show that teaching academic writing conventions is still needed. Omitting it marginalizes students within academia and relegates them to the back row of academic literacy. We are also convinced that self-editing, possible only through direct instruction, would benefit our students. Without the conventions they perpetually become potential failures ever-dependent on the lecturers' notions of correctness. We however feel that something is missing.

6.2. Rethinking the university writing curriculum along socio-cultural perspectives

Contextual realities, such as class size and shortage of teaching/learning resources, play a big role in pedagogical practices. Large class sizes create classroom organizational problems and the excessive marking loads are ever-worrying. So, while there is talk of a post-process period [1] the practice in many L2 contexts remains product-oriented because the intervening activities such as brainstorming, outlining, and drafting are omitted due to time. For instance at our university, semesterization reduced contact hours per week for this course from three to two; and due to heavy marking loads, student's work is returned long after submission but without direct contact with the student. Often students do not even collect the marked scripts. Those who do are only curious to see the grade but make very little use of the feedback. Additionally, the writing tasks are for

CA purposes only, and not because students need them for practice.

Housed in a study skills unit of programmes, and underpinned by behavioral psychological approaches characterized by genre writing drills, students and their lecturers perceive the course as essentially remedial implying a deficit view of the students. While all this is not fundamentally wrong, students trivialize this course as it seems not directly linked with their major field of study. This explains the indifference exhibited in their writing which renders their written texts very tedious to read.

Because the computer provides a hands-on experience to writing, it can entirely replace the writing lecturer so that such overly-indifferent students can receive feedback impersonally. However, this is only true for the mechanics (spelling, punctuation, and grammar) of writing! For instance, the computer cannot supply the description, argumentation, thesis statement, focus, or differentiate factual and experiential information (the essay content). The writer must also deal with the logical development of ideas and arguments, the effectiveness of the introduction and conclusion, and the sequencing of ideas in order of importance (the essay organization). The computer therefore can only supplement writing instruction.

Developing academic writing skills in L2 can be theorized as a process of apprenticeship in which the teacher's role differs from that of a disseminator of knowledge; and learning is viewed as a process of social participation rather than simply as acquisition of knowledge. Within such a situated learning approach to knowledge acquisition, teacher feedback may be viewed as part of the process of apprenticing students into legitimate participation. We recommended that writing and reading be understood as processes that occur together; a view not easily conveyed by the genre approach alone. When student writers position themselves as communicators in a discourse community (consisting of their peers, their lecturer, and themselves), they become their own first readers of the texts they produce. However, evidence from this study showed that because writing tasks are competitively understood by students, audience is perceived as either assessors (the lecturer) or plagiarizers (the peers)! How do we change this? A suggestion is to develop a whole language approach to writing instruction by creating pre-writing tasks that involve everyone but through alternative linguistic modes of participation. For example, before writing an essay requiring argumentation, we arrange lecture-room activities involving pre-reading around the topic, followed by discussing/debating, genuine listening, and

genuine note-making and summarizing. Such activities develop increased self-editing practices as the writer holds a genuine interest in communicating something to the audience. Additionally, an awareness of academic writing styles and conventions as conveyed via a genre approach is needed to reduce the chance of the writing processes ending in recurrent frustration.

7. Conclusion

The study has confirmed that although L2 writers need help in reducing textual inaccuracies and loss of clarity, explicit self-editing skill instruction, may not be very effective. We stressed the value of bringing socio-cultural perspectives to bear on understand students' attitudes and practices towards self-editing including a critique of the current model of teaching writing, which conceptualizes student writing as learning of autonomous skills. Although a longitudinal study would have provided more generalizable results, the findings of this study contribute to a resolution of the controversy over the effectiveness of feedback for L2 learners: that on its own, feedback is indeed ineffective without the accompanying conceptualization of writing as a whole language process; and as a process of communication involving a genuine desire to convey personal thoughts to a real discourse community of interested readers.

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Measurement of Students Counseling Satisfaction at the University Level at the Universities in Jordan

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Abstract

The purpose of this study is to measure students counseling satisfaction at the university level at the universities in Jordan. A questionnaire has been validated and verified. It is considered to raise three main dimensions. These are: counseling, counselor, the environment of counseling RESOPNSES ARE analyzed using statistics methods. The results indicate that the students have counseling satisfaction and there is no influence of sex and the level of the students on the CS .The study recommends using this scale in evaluating counseling in the universities and to conduct for their studies in this regard.

1. Introduction

Counseling has become much needed because it helps the individuals attain psychological and social growth and maturity which lead to progress and welfare [1]. Although the main goal of counseling is to help the individual achieve both personal and social harmony, the psychological counseling has become a basic need for individual like security, love, achievement, and social belongingness. As a result, psychological counseling has become a basic need for students to help them adapt psychologically and socially, and live peacefully [19].

Since the university students lead different changeable life with several psychological problems, counseling plays an important role in preparing the individual mentally and emotionally to accept the new experiences and changes in his environment such as family, work, education, and the technological revolution which need counseling services provided by universities.

2. Literature Review

It is very important to depend on efficiency standards including human intellectual skills, qualifications supported by practical experiences, and human factors such as attitudes and skills, is considered the objective base and essential requirement to achieve better management and development, and to raise the personal and

institutional performance which will reflect positively to all university students [10]. Therefore, it is necessary to have mental abilities, experiences, feature through which he can influence and interact with various situations of university life satisfactorily- since this satisfaction is a prominent traits which may characterize the whole personality. [12]. Accordingly, researchers have dealt with the qualities which characterize individual personality such as mental abilities which characterize individual personality, communication skills, maturity, responsibility, and social skills [7].

Since measurement is considered the scientific tool in accurate objective description for psychological aspects and it gives exact description based on mathematical and statistical operations [11].

The specialist in psychological measurement faces great difficulties to reach correct measurement for psychological features compared to natural phenomena because it is indirect measures the phenomenon through its behavior so it doesn't reach the relative measurement (ration), but its limit is the interval level [13].

It is impossible to measure the actual degree of the trait or psychological characteristic without mistakes [16]. Therefore, the accuracy of the results depends, to a large extent, on the accuracy of measurement used for target trait [8]. The importance of psychological measurement shows that it is a basic element in psychological studies [9]. Consequently, it is necessary to have accurate measures and tools characterized by good psychological traits [14]. Thereupon, the measure is a group of stimulants prepared in an objective way to suit the behaviour we intend to measure [15]. Thereupon, the personality of the university student is considered the most important aspect of his psychological ability through which he can overcome the psychological problems he faces. Then, we can select the suitable method and formulate verbal items which reflect the nature of satisfaction about psychological counseling to select the method and formulate the items to be experimented to find the psychometric characteristics which lead to the final formula of the measure. The practical benefit is clear by preparing a measuring tool to be used as a basic yardstick to identify the reality of satisfaction among the students. Theoretically, the procedures of constructing the

measure represents a theoretical continuity with the measurement movement in the Arab world as well as in the entire world.

3. Contribution to Knowledge

Counseling aims to help the student learn to understand himself such as his aptitudes, abilities, tendencies, and to know his motivations and ways of life to evaluate them either in content or results, so he can choose more suitable behaviour to realize his desired personal goals. Counseling Process: It uses scientific and practical methods to evoke the individuals' potentials to produce a prosperous society.

Measurement is the quality a trait exists in the individuals or things which can be transformed to symbols and figures controlled by certain rules.

Self-satisfaction is defined by pain as "a psychological feeling which may have positive and negative effects depending on the individuals psyche and related to the individual's feeling of threat [5].

Counseling is necessary to help the individual to grow and become mature psychologically and socially to achieve development and welfare [1]. Counseling is one of other social services, which spring from definite principles and maxims psychological, biological, social, philosophical, and ethical which are necessary to those who work in this field. Thereupon, it is important to measure satisfaction degree among university students about psychological counseling. For example, it is necessary to build up counseling centers, and to keep environment suitable for counseling using various tools and means.

Researchers have dealt with the qualities of the psychological counselor especially those related to the preparation, sense of responsibility, skills, and environment [6]. In another study conducted by Paterson 1982, he showed that the latest method of counseling is based on the hypothesis that students are unable to recognize their abilities and tendencies.

Another study by Al-Kateeb about personal factor related to the efficacy of psychological counseling, showed that there are five factors related to the efficiency of the counselor [3]. The skill of the psychological counseling appears in the use of the means of communication either verbal or non-verbal which aim to the effective communication [5].

Another study carried out by Abu Al-Heija is based on the assessment of counselor's effectiveness in the educational institutions in Jordan. He found out that counselors haven't reached their required educational level [2].

As a result, we have seen the importance of counseling in educational institution since the educational process is an accumulative one. Therefore, the role of the counselor is quite obvious at university.

4. Discussion

The Question 2: Is satisfaction among students affected by sex? The means and standard deviations calculated for each field as shown in table (1) which shows statistically significant differences at level (.05) about the range of satisfaction about guidance in its environment due to sex variable which was for male's benefit with (13.3) and (12.52) for females. Beside, the table shows that there are no statistically significant differences in guidance field, counselor, and the total range due to sex variable.

Table 1. Test (T) to examine differences significance at all levels of counseling based on sex variable

Domain area	Sex	Item	Mean	Standard Deviations	Freedom degree	Significance level
Guidance	Male	157	12.19	2.19	1.636	.202
	Female	263	12.1	2.11		
Counselor	Male	157	14.36	2.37	1.659	.198
	Female	263	14.39	2.58		
Environment	Male	157	13.3	2.65	12.633	...*
	Female	263	12.52	2.1		.28
Total	Male	157	39.85	5.81	1.165	.28
	Female	263	39.03	5.5		

Question 3: Is satisfaction among students affected by their academic level? The means and standard deviations were calculated for each field separately then totally as shown in Table 2 to know the significance of difference in the range of satisfaction about guidance at every level and for the scale as a whole according to the academic level variable. We use the analysis of (ANOVA), and Table 3 shows the results of the analysis. If we work at the above table, we see that guidance is affected by the academic level because significance level is 0.040 (a) whereas in other fields such as the counselor and the environment are not affected by the academic level whereas guidance is affected so it is an evidence the students in different levels have different attitudes toward guidance process and its importance which increases at high academic levels.

The sample consists of 420 students both male and female were randomly selected for Jordan university of Science and Technology, the university of Jordan and Al-Balqa' applied university. The previous studies have shown the importance of counseling in educational institutions since the educational process is an accumulative one and reveals the role of counseling at universities.

Table 2. Differences at all levels based on academic level

Area	Level of study	Number	Mean	Standard deviation
Guidance	1	124	12.6129	2.1891
	2	120	11.9167	2.2439
	3	138	12.0000	2.0540
	4	35	11.8286	1.7903
	Master	3	11.0000	1.7321
	total	420	12.1357	2.1436
Counselor	1	124	14.7097	2.5970
	2	120	14.2167	2.4191
	3	138	14.2319	2.4946
	4	35	14.4286	2.6154
	Master	3	14.3333	1.1547
	total	420	14.3857	2.5070
Environment	1	124	13.0645	2.3487
	2	120	12.7167	2.3699
	3	138	12.7101	2.3497
	4	35	12.6286	2.0592
	Master	3	14.0000	1.0000
	total	420	12.8190	2.3522
Total	1	124	40.3871	5.8611
	2	120	38.8500	5.6712
	3	138	38.9420	5.5234
	4	35	38.8857	4.8976
	Master	3	39.3363	2.2146
	total	420	39.3405	5.6260

Table 3. ANOVA to know the differences at all levels based on academic level

Area	Source	Nova squares	Freedom degree	Square means	F	Significance level
Guidance	Among groups (error)	43.7	4	10.93	2.410	.040
	Inter groups	1881.55	415	4.53		
	Total	1925.26	419			
Counselor	Among groups (error)	19.78	4	4.95	0.785	0.53
	Inter groups	2613	415	6.30		
	Total	2633	419			
Environment	Among groups (error)	15.82	4	3.96	0.713	0.58
	Inter groups	33.2	415	5.55		
	Total	2318	419			
Total	Among groups (error)	193.84	4		1.53	0.19
	Inter groups	12068	415			
	Total	13262	419			

We constructed 28 items. The initial list was checked by specialists who classified it into three fields: guidance, counselor, and environment. He depended on the Theory of Trait and Factor in constructing satisfaction among university students. He also depended on rational and experience method to construct the measure (scale) because some specialists indicated that it is possible to depend on more than one method in constructing personality scales, so both trait and factor theory, and this

method have been used as well as the experience of some specialists in this fields [12].

Validity of items: Each item in measuring satisfaction about counseling had been checked by some specialists to decide the validity of each item.

Measure instructions preparation: the way shows how it should be answered that their responses will be secret.

1. Statistical analysis: the aim of this experiment is to recognize each item of the measure of satisfaction about guidance among university students through statistical analysis to reveal its psychometric characteristics.

A. Sample Testing: Some specialists have suggested a number of 5 students in each item [18], others suggest a total of 400 students as a sample selected according to accurate standards [15].

B. Correcting the measure: since each item includes two alternatives, the first represents the positive side of the trait, and the other represents the negative side. We gave (Zero, one, for those alternates successively so the highest grade will be 28 while the lowest will be zero).

C. Statistical analysis of items: this process is considered a basic step to construct a measure. Although it probably reduces these items, it makes the measure more valid and consistent with other items [15]. The total degree of the scale has been used as an internal yard stick in this analysis, which leads to pure and homogenous one [17]. The item recognition has been found in dealing.

D. Item validity: the researcher uses the dual (binary) correlation co-efficient to find out validity between the degree of each item as interrupted scale and the total degree as a continuous scale. Researchers in psychological guidance indicate that the high relation between the item and total degree means that this item measures the trait the scale measures itself. When we put aside the weak degree and keep the high ones we have a more homogenous and valid scale [15]. The internal homogeneity among the items means that each item can measure the same functions which all items measure. Thereupon, putting the weak ones aside makes the scale more valid [20]. To achieve this, each correlation co-efficient of each item was calculated in statistical analysis data (420) individuals these co-efficients ranged from .,57 to .,22 and they have statistical significant at .01 level so the final scale includes 28 items represent the level of satisfaction about psychological guidance among Jordan universities students.

It has been shown that the counselor field has the highest value than environment, and the lowest was the guidance which shows that there is a general sense of satisfaction about guidance. Besides, there is a challenge from society which doesn't admit the importance or status of counselor. Moreover, there is another challenge from educational institutions which also don't recognize the essential role of guidance in the educational process. As a result, it was showed that there were no differences with statistical significance in the field of satisfaction about guidance. It also shows that guidance is affected by the academic level so the higher the academic level is the more important guidance is in the university life on campus.

5. Conclusion

It is very important to recognize the role of the psychological counselor and to open counseling centers. Moreover, it is quite significant to provide these centers with highly-qualified and well-trained counselors. Besides, we should carry out follow-up studies about the progress of the psychological counseling. Finally, further contrastive studies should be carried out.

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The Proving Patterns and Conceptualizations of the Nature and Role of Proof in School Mathematics: A Pilot Study on Freshmen and Senior Teaching Mathematics Students

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Abstract

In light of the current studies and the Turkish high school curriculum that emphasizes the importance of proof, justification and reasoning in mathematics education; this study aims to investigate freshmen and senior teaching mathematics students': a) conceptualizations regarding the nature and role of proof in school mathematics; b) reasoning patterns that emerge while proving mathematical statements. Data is collected in two sessions from freshmen and senior students during lecture hours, and being analyzed both qualitatively and quantitatively. This is a pilot study of an ongoing research and currently in data analysis phase.

1. Introduction

Recent curriculum changes in Turkey are based on constructive perspective, and highlight the importance of active, meaningful learning. In the new mathematics curriculum, conceptual learning is the basic approach. The curriculum states that the students are expected to engage in mathematics actively, learn how to solve problems, share, explain, defend their solutions and thoughts, and find relations within mathematics as well as between mathematics and other subjects [1].

General aims of the (high school) mathematics curriculum include that students will be able to: reason deductively and inductively, express their mathematical thinking and reasoning while solving problems, and use mathematical language and symbols correctly in order to communicate their mathematical thinking.

Regarding this focus on mathematical proof, this study aims to investigate both freshmen (they are recently graduated from high school) and senior teaching mathematics students' (who are about to become mathematics teachers) beliefs and attitudes

towards proof as well as their reasoning patterns that emerge while proving mathematical statements.

2. Research Questions

In order to reach the aims of the study, the following research questions were put forward:

- What are freshmen/senior teaching mathematics students' conceptions about the nature and role of proof in school mathematics?
- What are the reasoning patterns that freshmen/senior teaching mathematics students use when they are asked to prove mathematical statements?
- What are the differences between freshmen and senior teaching mathematics students' conceptions about the nature and role of proof in school mathematics, and mathematical reasoning patterns?

These questions will be answered by analyzing data from freshmen and senior students both qualitatively and quantitatively. The results will help to understand and compare prospective mathematics teachers' reasoning patterns and beliefs about proof in school mathematics.

3. Sample and Data Collection

Data was collected in two sessions from freshmen and senior mathematics education students. For the first session, 40 freshmen students participated in the study. These students were in the middle of the second semester of the program; therefore they have taken math courses in university. 19 senior students participated the second session and most of them were about to graduate at the end of that semester. The participants were asked to prove some mathematical statements (first part of the instrument) and then asked

about their beliefs and thoughts about mathematical proof (second part of the instrument). For the freshmen students, mathematical statements in the first part of the instrument were divided into two groups, so that it could be completed in a shorter period of time. Second part of the instrument was identical in both sessions. Instruments were conducted in paper-pencil form. Both sessions took place within lecture hours. The lecturers and the researcher were present during these sessions.

4. Instrument and Data Analysis

The instrument is developed in two parts. First part consists of mathematical statements that the participants are asked to prove. Some of these statements are as follows:

- Prove that if the square of a natural number is even, then that natural number is even.
- Prove or disprove: given any three consecutive integers, one of them will be divisible by three.
- Prove or disprove: The equality $1 + 3 + 5 + \dots + 2n-1 = n^2$ is true for all integers $n \geq 1$.
- Prove that, in a party of n people ($n \geq 2$), there are at least two people who have the same number of friends.

While these items were being developed, it was considered that the content is covered in the current high school curriculum and expert opinions were obtained.

Responses to mathematical statements are analyzed qualitatively in order to see the type of reasonings and proof techniques the students used, and comparisons are made between responses of freshmen and senior students.

Second part consists of items asking about thoughts, beliefs, and participants' background about mathematical proof. In this part, data is collected by a Likert type scale consisting of 16 items and one open ended question: "What does mathematical proof mean to you? Explain briefly". Response categories for the scale were from strongly disagree to strongly agree scored as follows: *Strongly Disagree* (1), *Disagree* (2), *Neutral* (3), *Agree* (4), and *Strongly Agree* (5). Items reflecting negative attitude were scored in reverse order. For the open ended item in the attitude scale, the responses are analyzed qualitatively to form categories.

Data is analyzed both qualitatively and quantitatively, according to the above mentioned research questions.

5. Conclusion

As mentioned above, importance of proof in school mathematics is emphasized both in the current high school curriculum [1] and various recent research studies [2], [3], [4], [5]. Therefore, both high school students and prospective mathematics teachers should be sufficiently competent in this regard. The reason for conducting the study in this group of students is that, they are prospective mathematics teachers and therefore important figures who will shape high school students' conceptualizations related to mathematical concepts in the future. Participants of the study are newly graduated from various high schools, and students who are about to graduate from university to become mathematics teachers. These characteristics give an idea about the basic tendencies of conceptualizations about proof in high school and university graduates. Therefore, this case study will be an important step for understanding and comparing prospective mathematics teachers' reasoning patterns at the time of starting the program and finishing it. Clarification of these reasoning patterns will be helpful in developing instructional implications for teaching mathematics programs as well as being helpful for instructors of freshman mathematics courses in terms of showing some of the tendencies in reasoning patterns seen in high school graduates.

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Breaking the Culture of Silence in Parent-Child Sexual Communication in a Nigerian Community – Baseline Data for Intervention

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Abstract

The study investigated parent-child sexual communication in relation to parental education and age with the aim of determining the level at which these categories of parents have been able to break the 'culture of silence' associated with sexual communication. Survey research design was employed for the study. The sample used for the study comprised 576 adolescent students and 551 parents selected from three local government areas in Osun State, Nigeria using multistage sampling technique. Data were collected using a self developed questionnaire titled 'Parent-Child Sexual Communication Questionnaire (PCSCQ). The instrument was validated using experts judgment. It was also tested for reliability. A reliability coefficient of 0.78 was obtained. Data were analyzed using chi-square, simple percentages and weighted average.

1. Introduction

It has been established in literature that the social and cultural environment of most African communities are governed by 'culture of silence' when it comes to discussing sexual issue. This is because some topics are regarded as taboo in African culture [1]. The dynamics of parent-child relationships and communications is greatly influenced by the culture and social environment. Parent-child communication on sexual issues remains a challenging issue in Nigeria and many sub-Saharan African countries as the social milieu in many traditional communities still constrains such communication. Initiating conversations about sexual issues may also be difficult for parents in such communities as they may be unsure as to how to approach such issues. They may equally doubt their competence in handling sexuality topics and the questions that may be raised by their adolescents or feel confused about the proper amount of information to offer [2].

Overtime there had been increased sensitization programmes in African countries especially by international organizations to break the culture of silence as regards sexual communication. Such

efforts include the intervention of UNFPA, USAID, COMPASS, Bill and Mellinda Gates, just to mention a few in training school counsellors, teachers and health care providers on adolescent sexuality, health and development. The output of such effort had been the introduction of Family Life Education into the Nigerian school curriculum with the aim of improving adolescent reproductive health. Most of these efforts are targeted at the teachers, learners and other educational practitioner. With all the interventions heard about, a particular group which is very important appears to have been left out and these are the parents. Parents are the initial foundation of character formation and the primary agent of socialization. Considerable research has addressed whether parent's communication with their children about sex actually impacts adolescent sexual activity. Most of this research has been correlational in nature. The general finding in more recent studies has been that higher levels of parent-adolescent communication are associated with reduced sexual risk taking on the part of the adolescent. In addition, parent-adolescent communication has been found to moderate relationships between other variables and sexual activity. For example, peer norms have been found to be more influential for those adolescents who have not discussed sex with a parent as opposed to those who have [3]. Early studies tended to find no significant associations between parent-adolescent communication and risky sexual behaviour, whereas more recent studies have observed such links [4, 5]. A small group of studies have found that higher levels of communication are associated with higher levels of adolescent sexual activity [6, 7]. These findings could be the result of parents deciding to talk with their children about sex after learning about or anticipating sexual activity on the part of the children (so that behaviour influences communication rather than vice versa). Or, it could be that such discussions encourage subsequent adolescent sexual risk taking. Whatever has been established in literature it is not known if the increased sensitization efforts have been making impact in reducing the culture of silence on sexual issues in Nigerian communities especially among the Yorubas. The fact that parents are not the primary

focus of many interventions makes it important to determine the level at which parents communicate sexual issues with their children and also to find out if the younger generation of parents communicate more with their children. The findings from this study can form the baseline of any interventional effort targeted at parents in improving their communication with their children on sexual issues. One of the dimensions that were pointed at by [8] as being important in general communication research was the perceived expertise of the source of the message. Expertise refers to knowledge, expert status, and familiarity with the topic. Expertise might come with years of experience and old parents would be expected to have more experiences about many things in life that could perhaps help them to communicate well with their children. It is worth noting also that expertise might equally come with education. Education is a very strong tool for socialization. Someone might be of age but not educated, but it would be expected that the more educated a person is, the more exposed he or she should be. Exposure through education should involve the acquisition of effective communication skills. If these assertions are valid, then parental level of educational attainment should invariably influence their expertise as well as their communication skills on many issues (sexual issues inclusive). Two research questions were therefore raised for the study. They are: What is the level of parent-child communication on sexual issue in relation to parental educational attainment and age? And will parental educational attainment and age significantly influence parent-child communication on sexual issue?

2. Methodology

Survey research design was employed for the study. The population for this study consisted of all the 188, 736 adolescent students in Osun State secondary schools and their parents. The sample comprised 576 students and 551 parents selected using multistage sampling technique. The first stage involved a random selection of three local government areas (Ife Central, Ayedaade and Olorunda) from the existing thirty local government areas in the state. Four schools were randomly selected from each of the three Local Government Areas. Afterwards, 50 students were selected from each of classes. Data were collected using a self developed questionnaire titled 'Parent-Child Sexual Communication Questionnaire (PCSCQ). The instrument was validated using experts judgment. It was also tested for reliability. A reliability coefficient of 0.78 was obtained. Data were analyzed using chi-square, simple percentages and weighted average.

3. Results

To test our hypothesis, parental educational qualification on three levels (no formal education and primary, secondary and tertiary education) was correlated with parents' sexual communication using chi-square (see Table 1). The Table 1 showed that a chi-square value of 3.46 was obtained at $p = 0.484$. Since the p value is greater than 0.05, the null hypothesis was upheld. It could be concluded that parental educational attainment did not significantly influence sexual communication by the parents.

Table 1. Chi-square analysis of Parents' educational attainment and sexual communication influence sexual communication by the parents.

Parents' Educational Attainment	Parents' Sexual Communication			Total	df	χ^2	p
	Low	Moderate	High				
No Formal Education to Primary Education	5 (7.5%)	41 (61.20%)	21 (31.30%)	67 (100%)	4	3.46	0.484
Secondary Education	28 (12.12%)	115 (49.78%)	88 (38.10%)	231 (100%)			
Tertiary	26 (10.78%)	141 (55.73%)	86 (33.99%)	253 (100%)			
Total	59	297	195	551			

$\chi^2 = 3.46, p > 0.05$

Out of the 253 that had tertiary education, only 86 (33.99%) of them were high sexual communicators, 141 representing 55.73% were moderate sexual communicators, whereas 231 had secondary education y t as much as 88 of them were high sexual communicators and 115 which is equivalent to 49.78 % were moderate sexual communicators.

Hypothesis 1: Parental educational attainment does not significantly influence parent-child sexual communication.

Furthermore, from the 67 parents with no formal education or maximum of primary education, 41 representing 61.20% were moderate sexual communicators while 21 out of the 67 were high communicators. This showed that the parents' educational attainment did not significantly influence their sexual communication. To test hypothesis 2, parents' age was put into four categories and correlated with their communication on sexual issues using chi-square analysis (see Table 2). The Table 2 showed that a chi-square value of 15.01 was obtained at $p = 0.029$. Since the p value is less than 0.05, the null hypothesis was rejected. Hence, it could be concluded that parents' age significantly influenced parent-child sexual communication.

The level of significance tilted towards the younger parents. Out of 100 parents that were below 40 years of age, 74 of them were high sexual communicators.

Hypothesis 2: Age of Parents does not significantly influence parent-child sexual communication.

Table 2. Chi-square analysis of Parents' age and sexual communication

Parents' Age range	Parents' Sexual Communication			Total	df	χ^2	p
	Low	Moderate	High				
Below 40yrs	6 (6.00%)	20 (20.00%)	74 (74.00%)	100 (100%)	6	15.01	0.029
41-50yrs	6 (1.72%)	80 (23.67%)	252 (74.51%)	338 (100%)			
51-60yrs	5 (5.81%)	16 (18.61%)	65 (75.58%)	86 (100%)			
Above 60yrs	7 (25.92%)	10 (37.04%)	10 (37.04%)	27 (100%)			
Total	24	126	401	551			

$\chi^2 = 15.01, p < 0.05$

The same thing went for parents between ages 41 and 50. They were 338 in this category out of which 252, representing 74.51 of the group and 45.74% of the whole respondents, were high communicators. Older parents (60 years and above) constituted 4.90% of the sample (27 out of 551), 37.04% of them were moderate communicators, 25.92% of them were low communicators and the remaining 37.04% were high communicators. It therefore showed that younger parents communicated sexual issues that the older parents.

5. Discussion

It can be concluded from the findings above that parents' educational qualifications did not significantly influence their sexual communication. It was discovered that even parents whose educational attainment was just secondary education averagely communicated sexual issues more than those with tertiary educational qualifications. On the moderate level of communication, little difference was observed between these two sets of parents. There could be some reasons why parents with less educational attainments would communicate more than those with higher qualifications. Some parents who had no opportunity of attaining higher educational qualifications because they dropped out of school due to teenage pregnancy or similar occurrences would rather want to prevent their children from the same pit fall by speaking to them from time to time on sexual issues. Another reason that could be adduced to these differences is that some parents who had tertiary education and are gainfully employed could be preoccupied with the demands of their jobs at the expense of parental care and attention that the children deserve. It was observed from the study that younger parents, especially parent within the age range of below 40 up to 50 years, were better sexual communicators than the older ones. To the researchers, the reason was not farfetched; most of these young parents grew in the same 'new' generation with their children. They were familiar with the current trends in adolescent development; they were equally familiar with the infiltration of the western culture as well as technological advancements. Some of the older

generations were seen by the adolescents as being out of touch with current lifestyles and pressures, and the adolescents therefore undermined their expertise on sexual issues. This assertion was strongly supported by [8]. Most of the parents in the category of older generation are regarded as belonging to the 'old school' by the adolescents, but the young parents especially those that were less than 50 years, which constituted the higher sexual communicators, belong to the 'new generation', or the 'new school'. They knew what is in vogue and could equally communicate with their children in line with what is obtainable in the contemporary age. It is therefore recommended that government as well as school counsellors, with the assistance of donor agencies, should organize adult training programmes on sex education. Mass media should also be encouraged to be actively involved in sensitizing parents on the need to be involved in sex education of their children.

6. Conclusion

Our results revealed that out of the 253 parents that had tertiary education, only 86 (33.99%) of them were high sexual communicators, 141 representing 55.73% were moderate sexual communicators, while 231 who had secondary education were high sexual communicators and 115 which is equivalent to 49.78% were moderate sexual communicators. Furthermore, from the 67 parents with no formal education or maximum of primary education, 41 representing 61% were moderate sexual communicators while 21 out of the 67 were high communicators. There was no significant relationship between parental educational attainment and sexual communication ($\chi^2 = 3.46, p > 0.05$). This result showed that the parents' educational attainment did not significantly influence their sexual communication. For age, out of 100 parents that were below 40 years of age, 74 of them were high sexual communicators. Likewise out of 338 parents between ages 41 and 50 years, 252 representing 74.51% of the respondents in that category were high communicators. Older parents (60 years and above) constituted 4.90% of the whole sample (27 out of 551), out of this, 37.04% of them were moderate communicators, 25.92% of them were low communicators and the remaining 37.04% were high communicators. It was therefore discovered that there was no significant relationship between parents' age and sexual communication ($\chi^2 = 15.01, p < 0.05$), younger parents were eventually found to communicate more on sexual issues than the older parents.

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Education of a Human Being as a Problem of Life Space Self-Organization

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Abstract

The paper considers the phenomenon of «education of a human being» in the context of a range of problems regarding human life space self-organization. There are various points of view on psychological systems self-organization in the article: self-organization as adaptation, self-organization as self-regulation, and self-organization as self-determination. On the basis of these points of view educational opportunities of a human being are considered an individual life strategy aimed at success.

1. Introduction

Considerable changes in psychological science regarding the transfer from “psycho psychology” to “psychology of a human being” [1] have given rise to crucially new educational trends. It refers to the term itself which is stated by I.Ya. Lerner in the following way: “Education can not be defined preciously...but...alongside with that...it is a phenomena of human activity regarding determination and formation of the image of man and his place in the world” [2].

The term “education” is represented in psychological and pedagogical literature as follows:

- education is a space for complicated and tense work aimed at formation of multi-dimensional consciousness and ability for self-determination in history, culture, and later on in profession triggering the student's self in the form of personal and professional self-development [3].

Analyzing the above mentioned definition one may say that “education” has got three main meanings:

1) Personal assets, a system of ideas and concepts in the subjective personal space guiding one's behaviour;

2) A process of personality introduction to culture, establishment and development of education as personal assets and whole cultural environment;

3) A special social institute (system of education), one of the components of cultural environment of a human being developing and applying a range of measures organizing and ruling education as a process of personality introduction to culture [4].

New terms that appeared in education such as self-development, self-design, self-education, self-realization, creativity etc. allowed to extend the understanding of world space of a human being considerably to a self-organizing system. In this respect, such terms as “opportunities extension”, “personal potential actualization”, and “self-evolution” combining the history of human development, its present and future are considered as synonyms to education. That is why the term “education” implies the continuity of the process, establishment of various human manifestations in his life activity or a human being on the whole. V.E. Klochko gives a new meaning to the category and defines education as “a consistent on-going sovereignization process concurrent with the establishment of a multi-dimensional world of a human being with a complete set of value-sense coordinates providing for the active and selective sovereign behaviour” [5].

2. Related Work

All existing opinions in psychology at present regarding education of a human being as a problem of psychological systems self-organization can be divided into three groups in the course of the analysis [6].

The first group includes psychological theories of the so-called adaptive type. Despite of the fact that the representatives of this group define a human being as a self-organizing system, they constrict its development to adaptation or conformity to the external environment. Human self-evolution is connected to the improvement of psychological mechanisms of life activity regulation and is consciously grounded on individual abilities of a human being to adopt to changing environmental conditions during regulation process, on personal qualities guiding one's social behavior and on the ability to assign universal human

values, social standards and attitudes that “organize human life” [7].

The understanding of psychic adaptation as an adaptation process is aimed at protection of body and psychics of a human being from destructive environmental impacts. The social and psychological adaptation is a constant process of a person's active adaptation to existing environmental conditions as well as the result of this process. Although social adaptation is a constantly-going process, this term however is often connected to the period of significant changes in the person's activity or environment.

Another important aspect of social adaptation is taking a certain social role by a person. Due to this, social adaptation is referred to as one of the main social and psychological mechanisms of personal socialization. The success of adaptation depends very much upon the adequate self-perception and understanding of one's social connections by the person: distorted or underdeveloped opinion about oneself results in various adaptation problems.

The problem of social and psychological adaptation also covers such terms as “adaptiveness” and “unadaptiveness” that are characterized by achievement or non-achievement of the set aims in the process of life activity correspondingly.

Main types of a person's adaptation process are formed depending upon the structure of the person's needs and motives and are as follows:

1) active type is characterized by mainly active influence on social environment;

2) passive type is characterized by passive conform acceptance of aims and value orientation of the group.

Psychological theories belonging to the first group pay attention to the stability as a characteristic of personality. Numerous studies of this type are devoted to the stress resistance, emotional stability, tolerance as conflicts resistance etc. as characteristic features of a personality. The representatives of this opinion point out that a personality can resist negative influence and perform reasonable constructive changes in the environment due to psychological stability, thus, providing for the efficiency of life and activity, development and improvement of a personality as well as preservation of psychic health.

Self-organizing origin of theories belonging to this group is connected to the systemic organization of psychic adaptation and its role in the conscious activity of a person. The process of psychic adaptation itself implies not only the influence of the subject on the environment but the influence of the environment on the subject. The psychic adaptation as a process of optimal conformity of a personality and the environment achieved in the course of activity gives a person an opportunity to satisfy urgent needs. Adaptation opportunities of a person are conditioned

by a complicated multi-level structural and functional system with mostly psychological or psychological mechanisms prevailing at each regulation level.

Scientists define the following levels of psychic adaptation: social and psychological; psychological (characteristic features of a personality, activities, and psychic states); psycho-physiological (integration of cerebral systems); peripheral (vegetative and humoral mechanisms). With account to numerous levels of psychic adaptation, it is considered to be an integral characteristic of a personality characterizing its stability and capability to resist break-downs in psychic adaptation.

Thus, a self-organizing origin of psychological systems is considered by the representatives of the first group to be connected to the system's ability to adapt to environmental conditions which guarantees the system's stability at all its levels under changing external conditions. Education of a human being in the context of the research held by this group of researches is a developing process of person's adaptation to constantly changing environmental condition at all levels of psychological system organization. Here one may speak about unilateral “adaptation” of a person: adaptation of internal to external which determines if a person's life activity is a success, that is why education here means “adaptation” and “conformity”.

The second group includes psychological theories considering self-evolution and self—organization of a human being as a process happening due to innovations that are “at the same time conditional and conditioning” for human development [8]. The representatives of this group believe that innovations are formed on the basis of a number of personal characteristics such as ability to keep and preserve all positive in one's history, accumulate the results of the development, keep up to date one's potential mental content, create something new in the world and in oneself extending the sphere of the potential [9].

V.G. Budanov points out that ideas developed in A.I. Bogdanov's tectology, L. von Bertalanffy's systems theory, N. Viner's cybernetics allowed to form a general idea about systems and their configuration, mechanisms for systems' integrity maintenance and homeostasis and ways of self-organizing systems management [10]. In this respect, the key concept of the theories belonging to this group is “self-regulation” representing the ability to be a subject of one's own conscious activity and the process of realization of this ability [11].

In the case of self-regulation the system functions in the following way: regulation effect is formed by collaboration of all system's components and due to this requires no constant control, thus being more reasonable as far as resources are concerned. Researches sharing this approach define self-regulation

as a systematic process including dynamic actions of a person (here these theories are superior to the theories of the first group) aimed at adaptation to constantly changing environmental conditions. The scientist underlines the cyclical pattern of this process.

Ideas about self-regulation developed in the laboratory for self-regulation of Psychological Institute of the Russian Academy of Education are characterized by its complexity regarding the internal structure of the defined self-regulation components due to the original personal orientation of the studies. Thus, for example in the planning phase up to 6 functions are defined (target setting, strategy determination, determination of effectiveness, subjective value, expectation and process-orientation). At present the researches' focus is transferred from general issues of self-regulation structure to the development of its cognitive and personal aspects, to the understanding of the fact that various personal and cognitive structures are backed by specific structures of individual subjective activity organization.

At the same time Russian studies differ from Western psychology in a way that the former develop from general theory of structure and functions of conscious self-regulation to the study of personality and individual manifestations and forms of regulation, whereas western theories start from study of personality and separate sides of regulation and moves to an integral self-regulation theory and understanding of the fact that regulation consciousness is a very important personal dimension.

3. Analysis of Findings

Despite of certain differences in approaches to the study of human self-regulation phenomenon, all scientific works demonstrate a common view of regulation as a most general function of psychic activity specific for a human-being allowing a person to act as a creator, executor, supervisor and judge of one's own activity, deeds, and life in general. Self-regulation is an embodiment of a general human ability to be a subject of one's conscious activity reflecting the abilities of his psychics and realized in a numerous variety of acts providing for the actual relations of the subject with various phenomena and manifestations of reality. Self-regulation is represented by two meanings: as a general ability for organization of activity of a human being acting as a subject of one's own activity and as a process of realization of the abovementioned ability in separate phenomena of activity, behaviour and communication. However, Russian scientist point out that the ability of self-regulation is becoming a general ability only upon completion of formation of an integral conscious self-regulation system, formation

of its conscious control and its introduction to the internal plan of actions.

The subjectness of a person is developed and is becoming more sufficient in the process of further improvement of the self-regulation system, thus giving ground to certain personal innovations: confidence, self-sufficiency, responsibility, and initiative in all spheres of personal self-determination.

Therefore, according to the second group representatives' opinion, the self-regulation is one of the innovations considered in the framework of the "human being" psychological system, "regulating" both his relations with the world and formation of other manifestations of self- (self-cognition, self-determination, self-evolution, self-realization, self-actualization and etc.) that make grounds for reality formation "where everything is progress and nothing is beyond progress" [12]. Self-organization of the psychological system is grounded on the basis of the human being's movement while performing individual vital activities at different levels aiming to accumulate innovations, of which central is psychic self-regulation. Within the context, education is "acquiring" oneself in the process of life (own abilities and potential for development) which occurs in the acts of interaction between "inner" and "external" resulting in innovations required for further development of psychological system.

However, the strategic factor for human being education in its complete sense can be the human being itself, and this is the opinion completely shared by representatives of the third group of psychological theories, according to which the self-organizing system is understood as the system that maintains its tolerance due to interaction with the environment and is able to transform its both its organization and processes within the system independently under impact of the environment. The conditions for the development of self-organizing systems as well as basic regularities and such mechanisms as differentiation, integration, hierarchization of elements, self oscillations and feedbacks are provided by the action of the strategic factor. The representatives of this group believe that emerging of any self-organizing system, i.e. cluster of elements is caused by one and only reason: acquiring higher tolerance by these elements. The reason and, therefore, the objective of the elements cluster is the strategic factor (according to the authors of these theories and within the context defined by us it is a human being) due to whom the unity emerges for higher tolerance of its component parts. The developed unity, the system, can perform its main function subject to reaching the identity with the elements that formed it and that represent the self-organizing systems of a smaller size. This provides for evolutionary systems development that is posted as the ontological

basis for synergetics and revealing the essence of the total philosophical principle “everything is in everything” that was developed due to works of P.T. de Chardin and others. Maintaining the attitude that “a human being came into existence and historically grows up from the whole material and the whole life” [13] P.T. de Chardin proves in his work “Christ in Evolution” that the evolution has an irreversible nature saying that the life has a certain logics from the moment of its germ and up to the present: initially setting the requirement to all living beings to survive by lucky chance or by any other way, and then gradually comes to setting the requirement to improve the world and then oneself. According to the scientist, this is the logics that stipulated for the ways of life action. Out of these one can name abundance that is reached by way of masses effect; inventiveness that defines world freedom due to its variability; indifference expressing itself in the contradiction “between the element that emerged out of the multitude and the multitude that continuously emerges out of the element in the evolutionary process”. In this respect, the sufficient characteristic of the evolutionarity is the simultaneous and uniform nature of the Universe “drifting” in the direction of super-complexity, super-focus and super-consciousness due to which the “human being phenomenon gains the specific and related sense”.

Expressing agreement with this characteristic (movement of the system in the direction of complication) we emphasize that in the framework of the evolution our position is close to H. Bergson’s considerations that “evolutionary movement was something simple and we could easily define its direction if the life would have the one single trajectory like that of a cannonball fires from a cannon. But here we deal with a shell, which burst into fragments the moment it was fired off; and these fragments being, as it were, themselves shells in their turn burst into other fragments, themselves in their turn destined to burst, and so on throughout the whole process. We perceive only that is closer to us – disperse movements of burst fragments. Starting from them we will have to gradually come to the initial movement. When the shell bursts its crushing is explained by both explosive power of powder it is filled with and metal resistance. The same could be said about the life fragmentation into individuals and species. This fragmentation in our opinion is due to the following two reasons: resistance experienced by life from the part of non-organized material and explosive force that the life bears in itself and that is caused by unstable balance of the tendencies” [14]. In this part we employ a big quotation since a metaphorical comparison of evolutionarity with the effect of the burst shell is most accurately reflecting the unevenness of the system

movement. This idea is supported by Ye.N. Knyazeva who points out that “chaos is lying in the basis of mechanism of considerably simple structures merged into complex ones and mechanism of correlating their evolutions tempos” [15]. In this respect the chaos acts as a method for organization complications and a method for harmonization of development tempos for different fragments within a complex structure providing nonlinear nature of the systems development.

V.G. Budanov contributing to this opinion writes that “within the processes of self-regulation there is a qualitative compression of information as a result of quickly flowing process of natural self-selection that is difficult to trace; the product of these process being the order parameter able to be observed” [10], this opinion is correlated with H. Bergson’s opinion that if it is required for the new specimen occurrence that the change would reach a certain value and commonness then it is imperceptibly and continuously committed in any living being in any moment.

Within the context of the third group theories, the subsystems are interrelated and interdependent; therefore, the peculiarities of the structure as well as the quality of organization of one of the subsystems can depend on the structure and quality of the organization of the other. The transition of quality features from one subsystem to the other depends on the peculiarities of organization of the system correlations and to be more particular, the quality features of these subsystems. In this respect E. Laslo remarked that “some systems are always requiring the medium of a particular type; it must be a medium consisting flows where the rich and continuous energy source is expanding the system” [16]. This point of view in its essence complies with the opinion expressed by A.G. Asmolov who pointed out that qualities of a human being that characterize one as the system element “open” only in the conditions of interactions within these or those systems [17]. In this respect, Ye.A. Semenova considers that the main strategic factor of a human being development is the human being itself, while the mechanisms of self-development in the authors opinion can be self-planning, self-regulation and self-organization [18].

Special emphasis shall be laid to psychological theories in the third group since these employ the heterostasis principle alongside with the self-regulation principle [19]. The question is the highest level of systematic organization of a human being – “development going beyond the standards through the standard-setting” [19]. The representatives of this group point at the universal feature of self-organizing systems of any nature, i.e. self-determining that allows readdressing the responsibility for the choice from the external causation or necessity to a human being itself.

This feature of a human being as a self-organizing system allows to consider the latter as the one able to “set oneself at the “limit” ... that symbolizes for him the readiness to part with oneself as one had been before the “event”, i.e. to change oneself” [20] acting not as a simple chain in the evolution but as the one responsible for the evolution.

Thus, having defined a human being as a self-organizing system we can detach the process of the system’s production and generation of the new that is immediately implemented into further determination of the system self-organization as a form where its development is performed. Thus, V.Ye. Klochko indicates that through the acts of such generation (the system’s generating the new) the self-organized system obtains the possibility to influence itself. According to him, this is “the principle of the system determination without which it is not possible to explain the mechanisms of the system self-organization and self-development as a form where self-organization is revealed” [21].

4. Conclusion

We pay attention to the fact that the education of a human being as a self-organization is possible in the space defined by the unity of the world and the human being itself since “beyond us the world is mutual propensity without succession, we have succession inside us without external sets-string”, and only the unity of these beginnings makes “the process of organization and interpenetration” [22].

Within the context, the education of a human being can be considered as the problem of self-organization of one’s living space (according to M.K. Mamardashvili, without a human being “the world shall lack order, truth and beauty”[20]), since the life of a human being itself is like a trajectory of movement of the self-organizing system within the time and space.

The understanding of the self-organization as the regulating bears a specific conceptual loading in respect of the human being education revealing through the possibility of the system for the self-generation, self-development, preserving its organization subject to changing internal and external conditions that are interacting with each other and providing the transition of the systems from one stationary state to the other with decrease in entropy, and, therefore, increase in the level of their organization.

We believe that the third group of the research has a direct access to the research of the human being education that is understood as the expansion of the possibilities since it considers the problems of emerging, existing, transformation, development and

self-development of a human being in their unity. In the framework of these research, there is a possibility to consider the issues of individual educational strategies defining the direction vector and content of a human being education that are in their turn are defining in respect of the selected strategy for the living potential realization [23]. In the process of life targets realization that seemed ended, we reveal their “transition”, “temporary” nature that reveals the prospects of movement to the next objective.

As such, to understand the education of a human being as the product of the human being oneself, his life, means the possibility to understand the human being itself – the most mysterious object in the world. In its turn, acknowledging the living subjectivity as the “specific single universal”, the living existence of reality and the notion “life” fills the life activity of a human being with real cultural and historical content. This is why in each single deed, action, act of vital activity and life creation a human being “feels oneself a part of this powerful life impulse” [24], personifying in the process of life the creativity, endless development, unperceivable variety that is the infinite number of freedom degrees that defines unlimited possibilities of a human being. In the coincident point of the human being possibility and reality conditions the “successful life” of a human being starts its development as a guarantee of achieving the objective in performing each separate action [25]. This is why the objective’s achieving gives to the human being the largest subjective satisfaction grounding the successfulness in life.

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Integrating Physical Education in Omani Basic Education Curriculum: Luxury or Necessity

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Abstract

Information on the health status in Oman depicts an increase of non-communicable diseases (NCDs) such as diabetes, overweight, obesity, and metabolic syndrome. An examination of factors related to this increase shows that there is a shift in the daily practices of the people, and especially men, as they grow older towards a more sedentary lifestyle. In addition, school curricula deal with the subject of physical education as a stand-alone topic. Integration of physical activities in the curriculum starting from basic education is warranted if plans to highlight the importance of physical activity and to curb the dramatic increase in NCDs are to succeed. Teachers and health professionals should be competent and aware of health issues affecting the country. Comprehensive programs need to target the child's family and community.

1. Introduction

Oman is located in the southeastern corner of the Arabian Peninsula and is one of the Gulf countries. The Omani population in 2007 was 1,999,697 and composed as follows: Under 5 (11.58%), between 5 and less than 15 (24.62%), between 15 and 49 (56.44%), between 50 and 59 (3.70%), and more than 60 years old (3.7%) [1]. In terms of health profile, Oman has moved from a country dominated by infectious diseases to a country burdened by non-communicable diseases (NCDs). In 2005, NCDs accounted for 75% of the diseases and cardiovascular disease was the leading cause of death. The NCDs were distributed among diabetes (12%), overweight (30%), obesity (20%), high cholesterol (41%), and metabolic syndrome (21%) [2]. People living in urban areas were more obese than those living in rural areas. Obesity and overweight combined were more prevalent in the Southern part of Oman. In 1991, more women than men were obese and overweight. The trend was reversed in 2000 with a decrease in the prevalence of overweight and obesity among women and an increase among men [3]. An increase of 6-fold in the elderly population is

expected over the next 25 years. Unless attended to, NCDs are a major threat to the country's human and financial resources.

This paper provides an overview of studies that explored the status of health and physical education in Oman. We suggest that a systematic plan of integrating physical education in the curriculum starting with basic education would help in establishing a lifestyle that would decrease the percentage of NCDs. This would also entail the provision of effective teacher preparation programs and targeting the families and communities by providing comprehensive programs.

2. Health and Physical Education Status

Many strategies could be tried to curb the expansion of NCDs. These strategies would have to target the lifestyle and behaviors of the population.

A search to locate studies on health and physical education status in Oman revealed that there were very few studies and most were conducted in recent years. The findings reflect an alarming picture.

With regards to the health status of Omani children, three studies were found. One study examined the body weight of a cohort of 400 boys and 150 girls in Seeb, Muscat, Oman at 6-7, 12-13, and 15-16 years. A routine health examination was required of all students at entry to primary, preparatory, and secondary levels. The authors computed the Body Mass Index which is weight in kilograms divided by the square of the height in meters at the three ages corresponding to the entry at the three levels. They found that obesity (BMI 30 or above) and overweight (BMI between 25 and 30) combined increased from 7.3% to 16% and to 23.3% at 6-7, 12-13, and 15-16 years of age respectively. Obese and overweight children at 6-7 years had a higher risk of maintaining their body weight status at 15-16 years. The longer children retained a normal body weight, the less likely they would be overweight or obese at 15-16 years old [4].

The second study examined heights, weights, minimal oxygen uptake (VO_{2max}), and activities during leisure time. Two classes were randomly

selected from two secondary schools in Muscat, one for girls, and the other for boys. The sample was composed of 83 girls and 64 boys, aged 15-16 years, which corresponded to a participation rate of 85%. Students were asked to fill out a questionnaire detailing their activities during leisure time for the past week. The heights, weights, and minimal oxygen uptake (VO_{2max}) levels were measured. Analyses showed that boys spent more hours on leisure activities than girls. They spent more time engaging in leisure physical activity and on TV viewing, computer games and internet than girls. They also had higher VO_{2max} and lower BMI than girls. It is plausible that the reason for the lesser hours spent by girls in leisure time is that they spend more hours on household chores than boys [5].

The third study involved Grade 3 and 4 boys participating in a summer camp in the Muscat area. They were asked to complete a 1.6 km run/walk. They also filled out a student and parent questionnaire reporting on the family's lifestyle and health status. A total of 109 boys, equivalent to a response rate of 96%, completed the questionnaire.

Sixty eight percent completed the distance running; the others combined running and walking. Parents reported that children watched TV or played computer/video games for an average of 3.2 hours per day. As for the data on the parents, 32.5% of the fathers and 8% of the mothers exercised at least twice weekly. A high father's exercise score was correlated with better child's performance and leanness while mother's obesity had a negative correlation [6].

Children's attitudes towards physical education and actual involvement in activities were the foci of two studies. The first involved newly enrolled students at Sultan Qaboos University (SQU) and the second involved 12 to 15 year-old children enrolled in a summer camp at SQU. The participants in the first study were 352 newly enrolled students at SQU. The study investigated the students' attitudes towards physical activity and their perceived values of six sub domains of physical activity, namely, the social, health, competing, aesthetic, catharsis, and ascetic. Students were selected at random and represented 14% of accepted students. The findings showed that both males (62% of the sample) and females (38% of the sample) exhibited positive attitudes toward physical activity with 91% engaging in regular weekly physical activity varying from less than two hours to more than 6 hours. Students had highly positive attitudes toward the health sub domain, positive attitudes toward the social, catharsis, aesthetic, and competing sub domains, and slightly unfavorable attitudes toward the ascetic sub domain [7].

The second study involved approximately 50% of children between 12 and 15 years old participating in the Summer Club at SQU. Results showed that the

147 children held positive attitudes towards physical activity as an avenue to promote health, socialization, and competitiveness. However, this study also found that participants had negative attitudes to the ascetic sub domain of physical activity. They were not comfortable with physical activity as an avenue for adventure. They did not want to take risks that could lead to injuries or involve dangers [8].

At the country level, a total of 2979 students in grades 7 to 10 participated in the 2005 Global School-Based Student Health Survey (GSHS) Results. They answered questions regarding their health and physical practices.

Among the participants in GSHS, 74% were physically active during the past 7 days for a total of at least 60 minutes per day. The rest were active mostly one or two days of the week. They sat for less than one hour per day (34.2%), one to two hours per day (31.4%), or 3 or more hours per day (34.3%). They walked or rode a bicycle to school (37%). Among the students who walked or rode a bicycle to school, 79% took 29 minutes or less per day [9].

Reviewed studies portray a rough profile of Omani children. They have a positive attitude towards physical activity but don't engage in physical activities for long periods, with girls engaging less than boys.

3. Interventions

Preventive measures are needed to address the risk factors associated with NCDs such as inactivity, rising levels in smoking, overweight, and obesity. Physical activity is a main preventive measure as it improves bone health and reduces the risk of developing type 2 diabetes, cardiovascular diseases, and obesity [10].

The Omani government is collecting statistics and providing services to people in all regions. The Ministry of Health is sponsoring many programs that aim to raise awareness regarding NCDs. One such initiative is a community-based intervention in Nizwa, Oman. The Nizwa Healthy Lifestyle Project (NHLP), started in 2004, aims to address the risk factors of NCDs through three subcommittees: tobacco control and accident prevention, promotion of physical activity, and promotion of healthy nutrition. The interventions include identification of NHLP Friendly Schools, implementation of the gulf program Alharaka Baraka (Move for Health) to raise activity in primary schools, lifestyle clinic, obesity screening and management, tobacco intervention, health education in schools and tobacco cessation clinic, and health professionals education and involvement [11].

A study using multistage random sampling was conducted in Nizwa between March and May 2006 to investigate the type and level of physical activity

among students. The area is located about 175 km from the capital, Muscat, and is inhabited by about 70,000 persons. It includes about 77 villages including Nizwa center. The participants were 509 boys and girls between 9 and 20 years old. Eighty percent did not have chronic diseases and 90% engaged in physical activities. The most common activities were walking, running, and playing soccer, with girls mostly walking and running. Girls played at home and at schools while boys played less at home and more at schools, open playgrounds and fields. More than a third of the students were not involved in physical activity at a level that would be enough to prevent rise of the risk factors at an older age. In adulthood, physical inactivity was about 70% in females and 50 % in males [12].

Physical activity is influenced by social, behavioral, cultural, and physiological factors. People were inactive for many reasons, namely, lack of awareness of the benefits of physical activity, social values that could restrict women's participation in activities in open spaces, shortage to non-availability of public places for physical activities, and the use of modern life accessories such as cars, TVs, computers, sedentary lifestyles [13]. As a result of the study, the authors recommended using schools to impart information on health and physical fitness, to increase opportunities at schools for children to engage in sports, and to implement the program "Move for Health" for children less than 12 years old in 10 primary schools in Nizwa. Parents are more involved in their children's lives at the formative years. Reaching them and enlisting their cooperation at home to instill healthy habits in children would be effective.

4. The Basic Education Curriculum

With the shortage of public places for physical education for boys and girls and scarcity of extra curricular programs, it seems logical as was concluded by the NHLP study to use schools as centers for implementing a solid plan to address risk factors.

Given that the schooling system spans over 12 years, the concepts of a healthy lifestyle throughout the school years could be delivered in a systematic manner. There is no reason to wait for the adulthood period to address the issue with the new generation. The ideal is to start at the basic education level.

According to the National Association for Sport and Physical Education (NASPE), children should accumulate at least 60 minutes of physical activity on all if not most of the days. The activity lasting at least 15 minutes should be spread out throughout the day and include different types of moderate and vigorous activities. The children should be active every couple hours if not earlier. The logical way to do so is to integrate physical concepts and activities

in all subjects [14]. A study in New Zealand gives one example of an initiative to include physical activity and to motivate children to develop habitual physical activity [15].

Physical education should offer opportunities for competitive sports but more important, it should expose children to a variety of physical activities or sports that could engage children in habitual physical activity throughout life [16].

An examination of the Omani educational system reveals that the first stage of basic education includes Grade 1 to 4. The subjects include Islamic Education, Arabic, English, Mathematics, Sciences, Social Studies, Physical Education, Artistic Education, Music Education, Environmental Life Skills, and Technology. The total is about 40 periods per week. The subjects are delivered using a variety of teaching methods to meet the needs of diverse learners. There is also integration among certain subjects but physical education is not one of them. It occupies 2 periods at each grade level [17].

The Ministry of Education is also implementing an experimental integrative approach in a limited number of schools with a potential for expansion to more schools. Physical Education occupies 3 periods (2 hours and 15 minutes) in grades 1 and 2 but it decreases to 2 periods (1 hour and 30 minutes) in grades 3 and 4. The subject remains non-integrated with other subjects [18].

The allocated time is less than the recommended NASPE guidelines. It could be that physical activity is viewed as achieved at the expense of academic performance. However, a study investigated the relationships of school-based physical education and activity to academic performance and found otherwise. The authors researched studies published from 1966 to 2007 via MEDLINE, PSYCHINFO, SCHOLAR.GOOGLE.COM, and ERIC Databases. They analyzed studies that used quasi-experimental, cross-sectional, and experimental designs. They found that physical education hours could be increased up to an additional hour per day without affecting academic performance. Responsive classroom behavior, positive self-esteem, and school satisfaction were positively correlated with increased physical activity levels. However, taking away time from physical education classes did not improve academic achievement and could be associated with development of health risk factors later in life [19].

5. Teacher Preparation Programs

The information on the current health status of Omani children needs to be imparted to university students graduating in physical education and to health professionals in the field through inservice training. Teacher Preparation Programs should include among other things content knowledge about physical education, planning developmentally

appropriate units, using teaching methods that involve diverse learners, and assessing physical education and its contributions to the physical, social, cognitive, and emotional domains [20].

6. Recommendations

The physical activity level of the Omani child is dependent on the availability of opportunities to engage in such activities. Given the shortage in facilities, schools present the most appropriate medium to reach the highest percentage of the new generation and their families. Starting with basic education is ideal. This suggestion is supported by the fact that around 25% of the population is between 5 and 15 years old and their parents would be among the 56% of the population between 15 and 49 years old. Steps are recommended as follows: first, there is a need to analyze the effectiveness and efficiency of the available physical education lessons in basic education; second, to include physical education in an integrative manner in the curriculum wherever possible; third, to combine nutrition, health, and physical information in a meaningful manner; and fourth, to conduct studies on the effectiveness of adding sports components to the curriculum.

Implementing physical education in Omani basic education is by no way a luxury. It is a necessity if the new generation is to adopt a physically active lifestyle and decrease its odds of developing NCDs.

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**Session 6C: Cross-disciplinary areas of Education,
Mathematics Education, Geographical
Education, Science Education**

Videogames and Gender Representation. The “Meta-Play” Educational Laboratory: an Example to Promote Sexual Health and Sexual Identity (Gallelli Rosa, Fanelli Rossella Domenica)

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The Effectiveness of Learning Cycle on Eleventh-grade Students' Chemistry Achievement in the United Arab Emirates (Nagib Mahfood Balfakih)

Videogames and Gender Representation. The “Meta-Play” Educational Laboratory: an Example to Promote Sexual Health and Sexual Identity

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Abstract

The construction of reality, sexual identity, and social roles is mediated by media images. Video games have become agents in the development of identities in children. Video games affect the child's definition of gender, through gendered and sexual images. Video games portrayals of men and women are characteristically stereotypical: men are strong, aggressive, blunt and authoritarian; women are, even when they occupy the role of hero, subordinate to male characters or are presented in terms of their sexuality. Video games are an example of how technology has been designed for a particular gender. Girls were for a long time not taken into account in the design of videogames. The male or the masculine remains the invisible norm. Many of the most popular games are leading to increased gender stereotypicality. This is one of the reasons why the majority of the girls are non-players, while most of the boys are players.

How video games may promote sexual health and reduce gender stereotypes?

1. Introduction

The premise for this paper is that health education in the field of sexuality has to be based on an analysis of what sexuality is and how it is defined in Western culture.

Such an analysis first requires consideration of the issue of the mechanisms of "male", "female", "homosexual" and "transsexual" cultural production-reproduction, a re-evaluation of the *topoi* connected with sexual and gender differences and a critical reassessment of society's definitions of the concepts of difference. These are all essential to creating an environment in which an individual is able to freely develop his "self".

From this point of view, sex education is definable as promotion of gender creativity. The *telos* of the educational objectives is therefore not bound by legal or dogmatic considerations or

influenced by the temptation to make the individual "conform" to certain identity models which are seen as "better" or "more desirable" than others. On the contrary, the educational aim is to support the individual in experimenting to discover where he/she "belongs" culturally by making his/her own choices about which path of personal identity to follow in order to gain fulfillment.

2. Games of Pretend and “Fluid Identity”

Games of pretend – both in their traditional form and in their current electronic forms – constitute an extraordinary resource for the individual seeking to acquire a sense of sexual self, which is at the same time fluid, autonomous and creative. The games involve the forms of communication through which the individual, in the dialogue with himself/herself and with other players, takes on roles and enacts them. He/she is thus able to bring out, alongside his/her own ordinary self, those aspects of the self which are not expressed in everyday life, and to confront these constructively. A game thus enriches the process of definition of one's own identity, enabling the individual to reinterpret his/her own experience in the new narrative configurations of that game. In this way, play makes it possible above all to foster that important process through which each individual defines his/her own self in relation to the ongoing exploration of what that self may become.

Traditional and virtual games offer the same opportunities for expression: they provide a space, voice and body for the “Possible selves” that inhabit our imaginations. The importance of this kind of expression is already widely recognised in children, who – through games of pretend and games of disguise – are able to develop and improve both their ability to understand and to make use of symbolism, and their ability to try out and experiment with multiple identities, by constructing storylines which enable them to develop their perception of themselves as autonomous individuals.

Thus, games of pretend provide an excellent means of expression for a child's desires and

creativity as well as laying the foundations for his/her ability to think in terms of symbols.

On the other hand, however, as far as adults are concerned, there has from this point of view been a marked sense of embarrassment in our culture: the perception seems to be that the process of identity experimentation – considered essential for the child – has to end with the onset of adulthood, which is seen as a culminating and defining moment in the development of the individual.

In Western culture, while competitive games and games of chance have acquired a certain status, games of pretend have been marginalised in the lives of both young people and adults. At the same time, the creative desire of these young people and adults to experiment with the multidimensional and evolving nature of their own identity has been covertly channelled in different directions: for the majority, in the direction of consumerism, where models and images are created on the basis of market interests; for the elite, in the direction of literary, cinematographic or theatrical production and consumption.

What the spread of virtual games is now doing is providing an undifferentiated supply – to young people, adults and children – of opportunities to enjoy the essence of play: to switch easily between many various identities in endless experiments that involve “crossing” the boundaries between roles, modes of feeling and being, and also between concepts, forms of knowledge, cognitive models and systems of values.

As far as gender is concerned, it would appear that fluidity is now and will continue to be an established phenomenon. In fact, as social and cultural complexity increase as a result of the dynamism engendered by globalism and the advance of technology, we find ourselves increasingly called upon to confront the issue of gender difference. In a way, the ordinary circumstances of our private and public lives increase the opportunities to question and negotiate with others the “male”/“female” dichotomy, and the relevant stereotypes. To take an obvious example: on a day-to-day basis, does a woman manager not find herself adopting “male” traits and behaviour? And does a male health worker, on the other hand, not end up adopting “female” traits and behaviour? By the same token, is it really possible for an ordinary heterosexual couple to avoid some kind of interchanging of the emotive, cognitive and behavioural roles and prerogatives that have been traditionally defined as “male” and “female”? Moreover, the “normal” heterosexual two-gender division is no longer the only way of experiencing sexuality: valid alternative interpretations, while still relatively rare, are increasing dramatically.

3. Sex Education as Promotion of Gender Creativity

Nonetheless, this intensification of the production and diffusion of models, ideas and images with which to identify, is not automatically accompanied by an improvement in the ability to take a critical and creative approach to the encounter-contrast between differences. It is in fact increasingly difficult for an individual to disentangle his/her own attempts to construct and reconstruct an identity from the pressure to conform in a consumerist, pleasure-seeking society. There is even an increased risk that this symbolic pressure, disguising itself as one of the numerous existential possibilities on offer, may be so subtly concealed as to be almost unrecognisable.

The games and toys currently on offer reflect and reinforce the cultural set-up, and provide real world opportunities for children, adolescents and adults to experience the pleasure of experimenting with their own multiple selves, without, however, allowing for proper critical control or imaginary transposition.

In the processes of play which enable the individual to experience fluidity of gender identity, critical control and imaginary transposition require a series of specific abilities:

- an ability to recognise the various aspects of the self brought into play through the roles one acts out;
- an ability to keep open the lines of communication between the different aspects of the self: those which are operational in normal life, those hitherto never brought into operation and those which can only be made operational through the profound transformations which play makes possible;
- an ability to recognise the evolution and transformation of one's own approaches to play, of the chosen "play worlds" and of the roles played;
- an ability to recognise one's selves as "incomplete" and constantly "changing", open to the idea of encountering and being seduced and hybridised by existential possibilities other than those ordinarily experimented with;
- an ability to identify and discuss the cultural models underlying the games in which one takes part, as well as the connections between these models and one's own play preferences.

4. The “Meta-Play” Educational Laboratory: an Example

How video games may promote sexual health and reduce gender stereotypes?

We examined group differences in gender representation, sexual health and sexual identity for groups defined by gender and video-game playing experience. We used a social impact video game

designed to promote sexual health and sexual education.

The experimental group (15-17 years old) was trained using a social impact video game. The control group (15-17 years old) played a non-social impact video game. We used a questionnaire to assess the knowledge level of sexual health and sexual transmitted diseases, and the influence of the videogames images on gender representation and sexual identity construction.

The major goal of this study is to demonstrate that a social impact video game may improve the gender representation and its implications for the sexual health and sexual identity.

The control group played a non-social impact video game: GTA – San Andreas.

We asked:

- “Do you Know the game GTA - San Andreas?”: 100% answered Yes;
- “Have you ever played it?”: 80% answered Yes; 20% answered No;

During the play session we register their conversations, they said:

“Kill him!”, rather than after have had sexual relationships with a prostitute “Kills her therefore steals the money!”

We made a “GTA – San Andreas Deconstruction” through:

- Storytelling in first person of the male and the female character in order taking conscience of the roles;
- Discussion on stereotyped characters;

We than administer the *Personal Attributes Questionnaire* [9], used to determine the sex-typing of personality, to assess the subjects’ sense of characters.

As to female character’s aggressiveness (from 1 not at all aggressive – to 5 very aggressive) they answered:

- 54% answered 1
- 17% answered 2
- 17% answered 3
- 12% answered 4
- 0% answered 5

As to male character’s aggressiveness (from 1 not at all aggressive – to 5 very aggressive) they answered:

- 0% answered 1
- 0% answered 2
- 0% answered 3
- 12% answered 4
- 88% answered 5

As to female character’s independence (from 1 not at all independent – to 5 very independent) they answered:

- 21% answered 1
- 12% answered 2
- 33% answered 3
- 21% answered 4

- 12% answered 5

As to male character’s independence (from 1 not at all independent – to 5 very independent) they answered:

- 16% answered 1
- 7% answered 2
- 25% answered 3
- 12% answered 4
- 50% answered 5

As to female character’s submission (from 1 very submissive – to 5 very dominant) they answered:

- 71% answered 1
- 12% answered 2
- 17% answered 3
- 0% answered 4
- 0% answered 5

As to male character’s submission (from 1 very submissive – to 5 very dominant) they answered:

- 0% answered 1
- 0% answered 2
- 29% answered 3
- 25% answered 4
- 46% answered 5

As to female character’s inferiority (from 1 feels very inferior – to 5 feels superior) they answered:

- 29% answered 1
- 25% answered 2
- 46% answered 3
- 0% answered 4
- 0% answered 5

As to male character’s inferiority (from 1 feels very inferior – to 5 feels superior) they answered:

- 0% answered 1
- 0% answered 2
- 16% answered 3
- 25% answered 4
- 59% answered 5

The control group perceive GTA – San Andreas’ female character as: not aggressive, not independent, submissive and inferior. Conversely the control group perceive GTA – San Andreas’ male character as: aggressive, independent, dominant and superior.

After the laboratory the control group get a sense of the stereotypes perpetrate by this videogame.

The experimental group was trained using a social impact video game on sexual health and sexual transmitted diseases.

We used a questionnaire to assess the knowledge level of sexual health and sexual transmitted diseases. Before the laboratory we asked them:

“The following which of diseases are transmitted through the sexual relationships?”

- 12% Mediterranean Anemia
- 24% Hepatitis turns
- 32% Sifilide
- Gonorrhoea
- **88% AIDS**
- 24% Some Tumors
- 24% Clamidia

- 8% I don't Know
- “Is Clamidia a Sexually Tansmitted Disease?”
- 28% Yes
- 24% No
- **48% I don't Know**
- “Is Gonorrhoea a Sexually Tansmitted Disease?”
- 8% Yes
- **44% No**
- **48% I don't Know**
- “Is Sifilide a Sexually Tansmitted Disease?”
- 32% Yes
- 28% No
- **40% I don't Know**
- “Is AIDS a Sexually Tansmitted Disease?”
- 100% Yes
- “Generally Are Sexually Tansmitted Diseases Asymptomatics?”
- 32% Yes
- **64% No**
- 4% I don't Know
- “Clamidia can cause infertility in women?”
- 20% Yes
- 24% No
- **56% I don't Know**

After the laboratory we asked them the same questions to assess if they acquired information about sexual health and sexual transmitted diseases:

“The following which of diseases are transmitted through the sexual relationships?”

- 8% Mediterranean Anemia
- 48% Hepatitis turns
- **88% Sifilide**
- **88% Gonorrhoea**
- **100% AIDS**
- Some Tumors
- **88% Clamidia**
- I don't Know

“Is Clamidia a Sexually Tansmitted Disease?”

- **88% Yes**
- 12% No

“Is Gonorrhoea a Sexually Tansmitted Disease?”

- **88% Yes**
- 12% No

“Is Sifilide a Sexually Tansmitted Disease?”

- **88% Yes**
- 12% No

“Is AIDS a Sexually Tansmitted Disease?”

- 100% Yes

“Generally Are Sexually Tansmitted Diseases Asymptomatics?”

- **96% Yes**
- 0 No
- 4% I don't Know

“Clamidia can cause infertility in women?”

- **84% Yes**
- 8% No
- 8% I don't Know

So the game of pretend and videogames develops not only the ability to de-contextualise, “mentalise”, decentralise, integrate, and exert executive control, but also reflective skills.

The objective then, for those concerned with planning education, is to create paths of development – which obviously differ in nature depending on whether they are designed for children, adolescents or adults – in which *play* experiences are accompanied by *meta-play* experiences.

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Investigating Environment and sustainability education in the BED programme of the University of South Africa

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Abstract

The study is pertinent to the University of South Africa in particular and to the South African education, and education beyond South Africa in general because of its envisaged data that will be generated, data that is needed to inform and shape further learning in environment and sustainability in schools. It is for that reason that this study intends to investigate environment and sustainability education in the BED programme of the University of South Africa. By using a qualitative research design and multi-faceted methodology, data needed to answer the research focus will be generated through questionnaire surveys, focus group interviews and document analysis as data instruments. The findings will be analysed and interpreted through transformative learning paradigms, and will be underpinned by thematic categorization of results. Hopefully, the results will enable education policy makers to make informed decisions regarding how they can support teachers in realizing the goals of the Decade for Education for Sustainable Development (DESD) and, furthering its principles beyond 2014. The intention is also to skill teachers from the participating schools to become resourceful in their own classes (regarding environmental learning) and in their endeavours to support colleagues with meaningful learning for sustainability.

1. Introduction

Environment and educational quality Environmental issues and concerns are becoming numerous and complex and new ways of addressing them are called for. This cannot be based on narrow and simplistic notion of education, but rather on multi-faceted strategies and approaches that consider educational quality and relevance. Various scholars and researchers posit that education must be of quality and relevance if global and local risks, vulnerability and health issues are to be mitigated and addressed (see Guidelines and Recommendations for Reorienting Teacher Education to Address Sustainability, 2005) [3, 5].

Reiterating the above observation on the need for quality education to promote a sustainable future, [11] observes that nations the world over are transforming their education systems to make them

more relevant to the needs of their citizens. It is argued that in order to be able to address human and ecological needs education must be able to produce a new kind of learner, worker or citizen. As such education must produce learners with attributes such as creativity, versatility, innovativeness, critical thinking, problem-solving skills, and a positive disposition towards teamwork [11]. De Clercq [1] aptly captures the reasons for the new education change agenda and points out that “the education system has to shift from a system that differentiates and socialises students for the rigid hierarchical division of labour of modern industrial societies, to a system producing high ability, high quality products with the ability to solve problems, think critically and apply new skills and techniques to different situations”. What discourses of educational quality can we discern from these observations? Firstly, education is perceived as an instrument for quality performance in local and global societal needs. According to Barrett et al [7] this denotes an efficiency discourse that is performative and draws on the power of scholastic reason for its success. There is an underlying economic motive to this model of education. Secondly, education is seen as a democratically focused endeavour – it is for citizens to think critically and decide on various changing situations. Barrett et al [7] calls this education model liberalist / humanistic. They further point out that the liberatory education discourse is inclusive and fosters participation in education processes. However, Barrett et al question whether these two discourses are sufficient to frame educational quality, and whether other educational quality conceptions might be possible to understand issues of environmental risks, vulnerability and health hazards in this age. For this reason Lotz-Sisitka points out that perhaps a third quality education discourse is needed, which could give focus to considering a wider conception of educational quality. Lotz-Sisitka argues that a socio-cultural discourse of quality education, which views learning as a social process in/with communities and society, might actually strengthen and extend the other two conceptions of educational quality that are dominating the educational reform discourse. This third discourse “foregrounds practice, situated learning, history, culture, meaning making, local and indigenous knowledge, reflexivity, emergence, participation and multi-disciplinarity in the learning and curriculum

re-orientation processes". This three-pronged approach to quality education seems relevant and useful to the investigation in this study as it encourages 'learning with connections', and 'learning with relevance to the future' [7]. This three pronged approach to quality education could be useful in understanding the present South African education system regarding environment and learning and the various challenges encountered in the implementation of the Learning Area Statements which try to create awareness of the 'connections' between social justice, human rights, a healthy environment and inclusivity and the relevance of these to the building of a united and democratic South Africa [10]. It is for that reason that teacher education – both pre-service and in-service are critical to the success of transformative learning processes for environment and sustainability education in South Africa:

- Environment and teacher education in South Africa Despite the fact that in 2003/4 the United Nation declared 2005 – 2014 as the Decade for Education for Sustainable Development (DESD), most schools in South Africa do not seem to be fully participating in this programme due to numerous reasons. Schools are either not informed (or not aware), or they see no reason (as there is no policy directive) why they should add another load – environment – on the workload they already have, or re-orientation will only take place five years after 2004/5, and by that time, ESD will be a forgotten narrative. This observation is also apparent in the Guidelines and Recommendations for Reorienting Teacher Education to address sustainability, 2005. However, there is also a perception, that some of the blame in this regard lies with the higher education system for doing little in terms of good teacher training – pre-service and in-service (personal conversation with teachers at a workshop 2008). In cases where environment and sustainability issues are addressed in teacher programmes, it may be that the quality of the curriculum and learning processes need strengthening. To fast track what is exactly happening in teacher education programmes in South Africa, whether curricular for teacher training does address issues of environment and sustainability, would need a comprehensive research study to do so. But it is known that some Universities are in the fore front of teacher training programmes with environment and sustainability education as foci, for example, (Rhodes University; University of KwaZulu-Natal;). Of note, is that these noble initiatives are not guided by national policy imperatives, as the national education policy does not mention sustainability education. The BEd programmes at the University of South Africa are currently under review for re-orientation. It is therefore envisaged that the investigation of this

research study for environment and sustainability education in the BEd programmes, will provide data necessary to inform the re-orientation process.

2. Focus of the study and research objectives

The research focus of this study is therefore to investigate environment and sustainability education in the BEd programme of the University of South Africa with the purpose of informing curriculum review. The objectives are to:

- identify aspects/areas of the BEd courses/modules/curriculum that have environment and sustainability issues as focus;
- establish how sustainability practices are currently included in selected schools;
- make suggestions for incorporating environment and sustainability practices in the curriculum of the B Ed programme.

3. Research methodology

The study is a review of the UNISA BEd curriculum, and both qualitative and quantitative data will be collected. More than one data collection method will be used to ensure that data generated are reliable and valid. These methods include document analysis, semi-structured interviews, and questionnaires. The proposed use of these methods is as follows:

- The document analysis (of course materials and outlines) will provide a broad overall review of the current BEd curriculum at UNISA.
- Interviews with the BEd programme managers and ten lecturers at UNISA will support the document analysis.
- Questionnaires will be sent to 20 teachers in each of four of the provinces (80 in total), in which current sustainability practices within the curriculum will be probed.
- Based on the responses from the questionnaires, 10/15 teachers will be selected for detailed semi-structured interviews to probe the implementation of the sustainability practices in their schools. The focus will be on establishing the teacher training needs in order to implement environment and sustainability education practices through the bed programmes at UNISA.

4. Time frame and outputs

The envisaged time frame is second and third terms in 2009. Of course the project might run into the first, second and third term of 2010.

We intend to share our learned experiences in our work-place department and in one relevant conference (national, continental or international).

From the written project report, we will also write a co-authored article for possible publication in a peer review journal.

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Understanding and attitude of some South African High School learners to biotechnology

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Abstract

This study investigates the understanding and attitude of learners to biotechnology in some South African high schools. The results showed that 55% understand the meaning of biotechnology but only 35% could give examples of biotechnology. Indigenous biotechnology practices and products were scarcely mentioned. The learners showed understanding of genetic engineering and cloning. However, examples of genetically modified foods were those of selective breeding and crop improvement. About 20% of the examples for cloning mentioned the cloned sheep, Dolly. The attitude of learners indicates that they would accept the applications of biotechnology to plants but not to humans and animals unless it was for medical purposes. The results indicate that learners do not have sufficient scientific understanding of the biotechnology. This is attributed to the type of examples and possibly the instructional materials used by the teachers, which have implications in the teaching and learning of biotechnology in schools.

1. Introduction

Biotechnology is one area of science and technology that has developed rapidly in recent times. As molecular biology and genetic engineering moves out of the laboratory into the public arena in the form of therapies, drugs and food products various issues relating to ethics, levels of acceptable risks and usefulness of the new product have been raised [1; 2]. Considering the daily applications of biotechnologies such as genetic engineering, cloning, genetically modified foods and other aspects of biotechnology, it has become important that students become more informed about the socio-economic and ethical implications of these technologies. Given the potential impact of biotechnology on human health, agriculture and the environment it is important that

young people have sufficient scientific background in genetics and cell biology and an awareness of the associated risks and benefits so that they are able to make informed decisions [3]. Currently high school science curricula around the world are designed to enhance this informed decision making through scientific literacy [4; 5].

In 2001 the South Africa Department of Science and Technology through the medium of the National Biotechnology Strategy acknowledged that there were a number of issues relating to the current public understanding of biotechnology in the country, such as the lack of understanding of the scientific basis underlying the potential benefits, risks and ethical and environmental issues relating to biotechnology. The document acknowledges that this problem is due to the fact that scientists do not communicate in the language that the public understands and that media reports often do not contain sufficient detail to inform the public adequately.

While concerns about genetically modified (GM) foods and other biotechnology related products and services are heightening, it has become important to improve the general literacy levels of the South African population regarding biotechnology. To this end, the South African National Biotechnology Strategy proposed the inclusion of biotechnology related instructions in the school curriculum to help improve public awareness. It is argued that encouraging discussions and debates on the potential benefits, risks and ethical and environmental issues regarding biotechnology at the high school level would help create public awareness, as these discussions often would not be confined to the classroom. Public understanding has been regarded by governments as vital for the successful acceptance of the new biotechnologies. This has led to many public surveys [6] and many governments have established public education programmes about the benefits of the new biotechnologies [7]. The National Biotechnology Strategy recommended that the Department of Education

promote curriculum development in schools in the areas related to biotechnology and that biotechnology training be extended to all teaching institutions. To this end the new South African National Curriculum Statement for Life science has incorporated elements of biotechnology related topics.

One of the essential elements of science education is to help students develop a deeper understanding of the world around them, and be able to engage in relevant discourse about science in everyday life [8]. A high level of scientific literacy can help young people to question the claims of the scientific community, weigh up evidence about scientific issues, use critical thinking skills and enable them to use their understanding of science to make well-informed and balanced decision [3].

The most common sources of information for young people are the public media, such as the television news and documentaries, newspapers and magazines all of which young people acknowledge could not always be trusted and school instructions, which they consider to be more reliable [9]. Osborne [10] questions the relevance of the science education that the Australian school system practises and queries whether such practises really do help to develop the kinds of competencies and knowledge i.e. scientific literacy that future citizens are likely to need. Holman [11] suggests a science curriculum that would prepare the non specialist. This he argues will better prepare the students for life as citizens in a society dominated by science and technology.

Lock and Miles [12] have shown that the knowledge of biotechnology among students is slight and reveals similarity between the students and the general public. There is a greater acceptance of biotechnology applied to plants and microorganisms than to animals [2]. There has been a paucity of information concerning the understanding, attitude and knowledge of South African students in biotechnology. Available information in this area is mostly from surveys in the UK, Australia, USA and Taiwan. In many of these studies a reasonable number of the students do not know the meaning of biotechnology and a good number could not give examples of biotechnology [6].

It has thus become imperative to query the extent to which the South African school curricula prepare students for technological citizenship? What do students know about biotechnology, cloning, genetically modified foods and genetic engineering? There does not appear to be any published study on the knowledge, understanding

of and the attitude of learners to biotechnology in South Africa at the time of this study.

2. Methodology

A sample of 160 Grade 11 high school learners of an average age of 15 years old was chosen from eight high schools in two districts in the provinces of KwaZulu-Natal and Gauteng. The schools were chosen from among urban, township and rural communities to give a broad spectrum of the categories of schools in South Africa as well as a wide range of backgrounds of the kind of learners found in South African schools. There were four urban, two township and two rural schools. Among the urban schools were a co-educational institution, a boys' school and two girls' schools one of which was privately owned. All township and rural schools were co-educational.

The learners were made to complete a questionnaire consisting of three parts; A, B and C, to determine their awareness, understanding and attitude toward biotechnology. In each school, 20 learners were selected to complete the questionnaire. The results from individual schools were not compared. The survey was conducted at the end of the fourth term (November 2007) when learners were deemed to have completed the curriculum for the year. At this point in time, these Grade 11 learners have completed 11 years of compulsory school education, which included three years of high school science education. During the 11th year learners would have chosen their matriculation examination subjects for Grade 12 and the learners sampled for this survey are those registered for the Life Science examinations in Grade 12.

The new South African National Curriculum Statement in Life Science, which came into effect in 2006 included instructions in biotechnology related topics in Grades 10 and 11. It was expected that at the time of the survey a total of about 20 weeks of Life Science, which includes topics such as the cell structure, cell division, chromosomes, meiosis, tissues, related diseases, sexual and asexual reproduction, inheritance, Microorganisms (bacteria, viruses, protists, fungi, HIV/AIDS, immunity, DNA, proteins synthesis, genes, genetic diseases, tissue culture, cloning, genetic engineering, fingerprinting, medical biotechnology and microorganisms in food production would have been completed in the schools.

3. The Survey

The survey was not a test and learners were given unlimited time to complete the questionnaire. They were also informed that no question was compulsory and as such could leave any question they were not comfortable with blank. The survey consisted of a total of 52 questions distributed in three sections; A, B and C. The administration of the questionnaire was done by the class teachers. The learners were asked to remain anonymous to encourage honesty in their responses.

Section A of the questionnaire tested the awareness and understanding of the learners on the concept of biotechnology and requested them to provide examples of the uses of biotechnology. It also requested them to provide definitions of words such as cell, nucleus, gene, chromosome, DNA, genome, protein and amino acids, which were expected to have been covered by the learners in Grades 10 and 11. Section B tested the learners' understanding of terms such as genetic engineering, cloning and genetically modified foods and required them to provide examples each. Section C tested the attitude of the learners on the applications of biotechnology by provided a list of biotechnology applications and required the learners to indicate these were acceptable to them or not. The learners were further requested to give reasons why the listed applications were acceptable to them or not.

An ideographic coding method was used to code the information obtained from the questionnaire. A coding scheme was developed for every question after reviewing all the responses in each question. The data was analysed using MS Excel.

4. Results

PART A: Understanding and examples of the uses of biotechnology, and meanings of biotechnology related words

The learners were asked if they were familiar with biotechnology and to give examples of the uses of biotechnology. Fifty five percent of the respondents were familiar with the term biotechnology while 43% claimed not to be familiar with the term. Only 2% of the respondents did not respond to this question. Responses to questions on the examples of the uses of biotechnology showed that 35% of the respondents gave examples of foods (7%), medicines (4%), agriculture (2%), research (10.8%), beverages (1%), biological weapons (0.2%), environmental

and industrial (1%), and others that were not biotechnology related (8%). Sixty five percent of the expected responses were returned blank (Table 1) More than 70% of the responses relating to research referred to cloning. Use of biotechnology in local food and beverage production or other forms of traditional applications were not mentioned by any of the learners except for baking of bread. Responses to the questions relating to

Table 1. Examples of biotechnology given by learner

Examples	Mean number of learners	Percent of total (%)
Foods	11	7
Medicine	7	4
Agriculture	2	2
Research	16	11
Beverages	2	1
Bioweapons	0	0
Environmental/Industrial	2	1
Others (unrelated)	12	8
No response	99	65
Total	152	100

Table 2. Responses to question on the meaning of some terms used in biotechnology related terms given by learners

Biotechnology related terms	Number of correct responses	Percent (%)	Incorrect responses	Percent (%)	No response	Percent (%)
Cell	114	75	24	16	14	9
Nucleus	112	74	20	13	20	13
Chromosome	90	59	13	9	49	32
Gene	99	65	23	15	30	19
Genome	11	7	10	7	131	86
DNA	81	53	41	27	30	20
Amino acid	40	26	37	24	75	49
Protein	65	43	34	22	53	34

meaning of words related to biotechnology showed that more than 50% of the learners understood the meaning of the words cell, nucleus, chromosome, gene and DNA while 43% knew the meaning of protein, 26% amino acid and 7% genome (Table 2)

PART B: Understanding of genetic engineering, cloning and genetically modified foods

On the question testing the understanding of genetic engineering, cloning and genetically modified foods, the responses showed that 40% of the learners understood what genetic engineering meant, 71% cloning and 60% genetically modified foods. However, only about 29% could provide examples of genetic engineering (Table 3), about 50% of cloning (Table 4) and 40% of genetically modified foods (Table5).

Table 3. Examples of genetic engineering given by learners

Examples	No of students	% of total
Cloning	2	1
Genetically modified foods/microbial food production	4	3
Medicine/medical research	10	7
General research/gemplasm research	10	7
Agriculture	2	1
DNA testing	7	5
Reproduction technology	3	2
Transplantation/body part	1	1
Plants and non-food examples	3	2
Animals and non-food examples	2	1
No response	108	71
Total number of students	152	100

The examples of genetic engineering and cloning were dominated by mention of the cloned sheep, Dolly. Other examples of cloning included plant and microbial examples used in research.

Table 4. Examples of cloning given by learners

Example	No of students	Percent of total (%)
Dolly	31	20.4
Other cloned animals	8	5.3
Cloned plants	5	3.3
Cloning microorganisms	8	5.3
Cloning humans	18	11.8
Use of stem cells to replicate other cells	3	2.0
Reproductive technology	5	3.3
Unrelated	18	11.8
No response	56	36.8

PART C: Attitude toward and acceptability of the uses of biotechnology

Responses to this section of the questionnaire showed that the learners approved of 56% of the uses of biotechnology given and disapproved of 41%. Application of biotechnology in aesthetic and sports development (76%), and environmental management (71%) was highly accepted (Table 6). Direct applications in food production, such as the use of microorganisms and animals in food production (56%) and plants in food production (65%) were also well accepted. The application of biotechnology to humans and animals for non food (45%) or medicine (44%) purposes was poorly accepted. However, the acceptance of practice involving humans in medicine and disease treatment was well accepted. Gene manipulation on plants not related to food production was accepted, as is shown in the response to plants in sporting facilities. Where the applications tended to suggest the use of animal or plant genes in humans, there was a strong rejection. The reasons given for acceptance and non-acceptance of the uses were

mostly religious and moral considerations rather than scientific.

Table 5. Examples of genetically modified food given by learners

Examples	No of learners	Percent of total (%)
Resistant seeds	7	4.6
Long life products/fish/meat/grains	6	3.9
Improved yield crops/meat/poultry/other agricultural plants	15	9.9
Fruits/larger fruits/seedless fruits/frost resistant fruits	19	12.5
Vegetables	5	3.3
Fast growing/maturing crops	4	2.6
Yeasts/microorganisms/beverages/alcohols	3	2.0
Foods that contain preservatives	1	0.7
Non-GM food examples	25	16.4
No response	67	44.1

5. Discussion

Results from this survey shows that 55% of the learners knew the meaning of biotechnology and more than 50% could give the meanings of terms such as cell, nucleus, chromosome, gene, DNA and protein; however, only 35 percent could give examples of biotechnology, most of which were related to research, foods and medicine while 65% could not. This contradicts the 55% claim by the respondents to understanding the meaning of biotechnology. Although, examples relating to research in biotechnology represent 11%, which was the highest of the groups of responses, more than 70% of these examples referred to cloning. The learners probably got information about cloning from academic sources as well as social sources, such as radio and TV since most of them could give scientific examples of cloning such as the cloned sheep Dolly and examples of cloning from movies. These results are similar to earlier results from research conducted in Australia, Taiwan and the United Kingdom [2; 6]. It is evident from the results that learners could not readily distinguish between genetic engineering and cloning, and between genetically modified foods and foods produced by using other biological processes. Unlike earlier report by [6] the learners in this study tended to consider all foods produced through biological process other than normal agricultural processes as genetically modified. Hence the wide range of examples fitting into many groups of agricultural products. While the learners demonstrated a good understanding of the basic concepts of the cell and molecular biology terms like cell, nucleus, amino acids, proteins, chromosomes, gene this knowledge did not seem to

transfer effectively to the understanding of biotechnology and genetic engineering.

Table 6. Learners' acceptance and rejection of biotechnology practices

Biotechnology applications	No. accept	% of total	No. do not accept	% of total	No. no response	% of total
Plant food products	99	65	50	33	3	2
Animals and humans in Medicines	97	64	49	32	6	4
Humans in non-medicine purposes	44	29	101	66	7	5
Microorganisms and Animals in foods	85	56	63	41	4	3
Microorganisms in environmental management	108	71	39	26	5	3
Plants and animals in sports and aesthetics	116	76	30	20	6	4
Animals in non-food products	45	30	100	66	7	5

Another important feature in the results is the lack of mention of traditional uses of biotechnology in processes, such as the brewing of "umqombothi", a common alcoholic beverage made from maize or sorghum malt, water and yeast by the African peoples of South Africa, composting, sewage treatment and sour milk by the learners. This shows that their understanding of biotechnology is limited to the kind of information obtained from the prescribed books. This low ability to identify local examples of biotechnology could be attributed to a number of factors. Although the National Curriculum Statement (NCS) makes provision for the use of common examples to illustrate biotechnology, educators have not been able to identify adequate numbers of traditional indigenous materials for use as examples of biotechnology. While it could be argued that these examples would vary from one community to another some general examples, such as the sorghum beer (Umqombothi) could be identified across the country. Could this deficiency be a function of the insufficient information and guidelines in the NCS, a lack of teacher resourcefulness or inadequate teacher training? This could also be a result of lack of or limited interaction between scientists, communities and teachers, a situation which disadvantages the learner greatly, as there are limited opportunities for biotechnology education to flow to the learners from the communities and practising scientists. The National Council for Biotechnology Education (NCBE), Biotechnology and Biological Science Research Council (BBSRC), the Science and Plants for Schools (SAPS) and other centres in the UK provide avenue for biotechnology education to flow from scientists to non-scientists [2]. The exposure

of young school children to science exhibitions, symposia and workshops as part of a science literacy campaign would enhance the knowledge and understanding of learners in biotechnology and other scientific fields.

The results showed that 40% of the learners understood the term genetic engineering, 60% genetically modified foods and 71% cloning but only 12% could give examples of genetic engineering, 30% genetically modified foods and 28% cloning. These results are similar to those obtained in the questions relating the understanding of biotechnology and the examples. The results obtained in this survey are comparable to those obtained in earlier studies in the UK, Australia and Taiwan. In all cases, a larger percentage of the respondents were unable to give examples of biotechnology and genetic engineering. These results are further indication that the curriculum has not been able to adequately prepare the learners for the future role of making informed decisions about issues relating to biotechnology or make meaningful contributions to discussions in this area, thus scientific literacy cannot be said to have been effectively acquired because the learners lacked basic scientific knowledge.

The reasons given by learners for acceptance or rejection of the uses of biotechnology, further confirms the limited knowledge that they have in biotechnology. There were limited cases of scientific considerations as the basis for the reasons given; rather most of the reasons were based on social, moral or religious justifications. Some learners were emotional and would query the interference with natural phenomena for any purpose. While most learners would accept the application of biotechnology on plants, application on animals, particularly humans was not supported (Table 6).

These results are not a total deviation from the results obtained in previous studies, where the attitudes of the respondents tended to depend on the organisms involved in the application [2; 3]. These studies have shown that applications on microorganisms and plants are readily accepted while animal applications are treated with caution except where medical application such as the production of medicines and the development of immunity in animals are involved [2]. Although these studies have been on adult members of the public, results from the present study show a similar pattern of response (Table 6). The 65% and 30% acceptance for the application of biotechnology in plant food products and animal non-food products respectively are indications of the level of understanding and the bias against the

use of animals in biotechnology. The use of animals for medical purposes was, however, well accepted (64%) while other animal applications were more cautiously accepted (29%). These responses bothered more on moral values and religion rather than scientific knowledge, as was earlier mentioned. It can be assumed that some of the learners were not very sure of the answers they were giving, given that most of them could not give examples of biotechnology and genetic engineering. These types of reasoning shows that the learners' knowledge in biotechnology has not been scientifically grounded and would not enhance their decision making on biotechnology related issues. It also emphasises the kind of sources where learners receive their information. The implication of these results in the teaching and learning of biotechnology in schools is that the approach to teaching would need to be reviewed. The national curriculum statement in life sciences provides adequate opportunity for teachers to improve the literacy levels of their learners in life sciences. To be able to harness these opportunities to the advantage of the learners, adequate indigenous and other familiar examples should be introduced into the teaching materials. More involving exercises should be used to illustrate the meaning of biotechnology and genetic engineering.

6. Conclusions

While it is acknowledged that the school curricular has been improved in South Africa to provide adequate instructions for better scientific literacy, it is very evident that more needs to be done on the improvement of the modes of delivery and the content knowledge of the life science teachers. It is very evident that examples used in the classroom to illustrate biotechnology have not been well understood by the learners, as these may be abstract or foreign to them. Although, some indigenous examples of biotechnology products were given in the national Curriculum Statement in Life Sciences, it would be useful to explore the identification of more indigenous examples parallel to the ones used in prescribed books to improve on the learners understanding of the biotechnology principles taught.

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Investigating the Effect of the Training Program for Teachers of Mathematics “Development of the Mathematical Creative Thinking” for Seventh Grade, Basic Stage Pupils

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Abstract

This study aimed to find the effect of a suggested training program for the teachers of mathematics on developing the ability of mathematical creative thinking for seventh grade; basic stage students. The study tried to answer the following questions:

1- What is the effect of the suggested training program for the teachers of mathematics on developing the ability in mathematical creative thinking for seventh grade; basic stage students?

2- Are there significant difference ($\alpha = 0.05$) in students' mathematical creative thinking due to the study variables: gender and nationality?

The sample of the study involved (281) students, (148) males and (133) females in seventh grade in Amman, and (82) females of the seven grade in Saudi Arabia. Teachers were trained to explain and clarify the suggested program. They presented the school curriculum to all groups. The experimental groups were differentiated from the control one by presenting situations related to the aspects of mathematical creative thinking.

Torrance Test for Creative Thinking (TTCT) was used to evaluate the students' mathematical creative thinking. The test was presented after the program ended.

The researchers used Analysis of Multi-variance to analyze the results of the students in the test at a critical value of ($\alpha = 0.05$). The results of the statistical analysis showed the following:

1- There was a significant difference ($\alpha=0.05$) between the means of the experimental group and the control group on mathematical creative thinking in favor of the experimental one.

2- There was statistically significant difference ($\alpha = 0.05$) in students' mathematical creative thinking that can be attributed to gender in favor of female, and nationality in favor of Saudi Arabia.

In the light of those results, the researchers recommended that it's necessary to give priority to the mathematical creative thinking training for teachers and students. It is also recommended that the curricula of the faculties of educational sciences

include courses specialized in teaching thinking and conducting training workshops for preserves teachers on mathematical creative thinking. Also it is recommended that mathematics curricula should include situations to stimulate creative thinking.

1. Introduction

The rate of the accelerating changing in the world is producing an environment that is more unpredictable than ever before with a wider range of options. This require people with increased flexibility and adaptability Therefore one of the primary academic program goals at all stages is to have our graduates think and act creatively [24].

Interest in creativity as an area of educational research began in the second half of the 20th century, since then, creativity research has had an impact on educational objectives, teaching strategies, and administrative practices [30]. The concept of creativity includes an inter related set of intellectual skills, personal characteristics, and values .The skills include: creative thinking, critical thinking, and innovative problem solving. We define creative thinking as the consideration of a broad range of new, sometimes abstract, ideas and the establishment of new connections and relationships among these ideas. Critical thinking is the performance of careful and exact analysis, ultimately leading to a deeper understanding of an issue. Innovative problem solving is defined as combining knowledge with imagination to produce solutions to problems. The personal characteristics linked with creativity include: versatility, tolerance for ambiguity, willingness to take risks, open mindedness, confidence, and curiosity ([9], [18]. Torrance has insisted that creative teaching should not be left on its own. He stresses throughout his research that creative thought can be activated from preschool to university teaching. With respect to the above, in order to develop creativity in mathematics education, teachers and students need much more than solid mathematics knowledge [19]. Mathematics programs should supports and values

curiosity, imagining, exploring, questioning, and risk taking [32]. Limiting the use of creativity in the classroom reduces mathematics to a set of skills to master and rules to memorize. Doing so causes many children's natural curiosity and enthusiasm for mathematics to disappear as they get older [13], [19].

The visionary classrooms described by leaders in the National Council of Teachers of Mathematics [20], enable students to confidently engage in complex mathematical tasks, draw on knowledge from a wide variety of mathematical topics, sometimes approaching the same problem from different mathematical perspectives or representing the mathematics in different ways until they find methods that enable them to make progress [20]. The essence of mathematics is thinking creatively, not simply arriving at the right answer [11].

2. Analysis

This review of literature provides evidence for the importance and the development of mathematical creativity. An examination of the literature that has attempted to define mathematical creativity found that the lack of an accepted definition for mathematical creativity has hindered research efforts ([10],[32], identified over 100 contemporary definitions. Haylock summarized many definitions and says creativity "includes the ability to see new relationships between techniques and areas of application and to make associations between possibly unrelated ideas" [12]. Singh defined mathematical creativity as the "process of formulating hypotheses concerning cause and effect in a mathematical situation, testing and retesting these hypotheses and making modifications evaluating unusual mathematical ideas, sensing what is missing from a problem, and splitting general problems into specific sub problems and finally communicating the results"[27]. Krutetskii characterized mathematical creativity in the context of problem formation, invention, independence, and originality. Others have applied the concepts of fluency, flexibility, and originality to the concept of creativity in mathematics [12], [16]. Others added elaboration and sensitivity [14]. Torrance summarized the results of 142 studies designed to test approaches to teaching children creatively and found that the training programs and its modifications was the most successful [32]. Scope [22] assess the effect of instructional variables on creativity. He identified studies. He found that there are many instructional variables such that: questioning, responding to students, independent practice. A recent quantitative review of the effectiveness of creativity training was conducted by Scott, Leritz and Mumford [22]. They classified the dependent variables into four categories: divergent

thinking (fluency, flexibility, elaboration and originality), problem solving, performance, and attitudes and behaviours. The result reveals the positive effect of such creativity training programs.

Many research conducted in the Jordan and Saudi Arabia to assess the effect of training thinking programs on developing students thinking. The results reveals that were effective [2], [25]. Köhler [17] discussed an experiment in which one group of children worked on the traditional method; the problems were constructed so a single correct answer existed [26], [21]. A second group was given an open-ended nature of the task .This group created and answered more questions than were posed to the first group, calculated more accurately and arrived at more correct results. Researchers at Japan's National Institute for Educational Research conducted a six-year research study that evaluated higher-order mathematical thinking using open-ended problems (multiple correct answers). In a round-table review of the study, Sugiyama from Tokyo Gakugei University affirmed this approach as a means to allow students to experience the first stages of mathematical creativity [7].

3. Research Focus

The main purpose of this study is to find answers to the following questions:

- 1- There was a significant difference ($\alpha= 0.05$) between the means of the experimental group and the control group on mathematical creative thinking in favor of the experimental one.
- 2- There was statistically significant difference ($\alpha=0.05$) in students' mathematical creative thinking that can be attributed to gender and nationality.

4. Significance of the Study

The study is especially significant owing to the virtually non-existent data of applying mathematical creative thinking while teaching mathematics by the teacher in Jordan and Saudi Arabia. Despite the serious effort taken by the Ministry of Education to improve the quality of the teaching/learning situations , and the considerable interest in finding new and effective ways to encourage the development of the mathematical creativity of the student, due to a rising demand for creative competence in an ever changing society. Many teachers are still affected by the traditional view of education in which the teacher spoon-feeds unrelated bits of information to passive students who are expected to automatically assimilate this information and transform it into desirable learning. For these students, the concept of mathematics is of "a digestive process rather than a creative one" [16]. This study was to explore the effect of shifted to creative a teaching/learning situation which means

not only proposing challenging problems for the students, but also offering many different tasks build the creative thinking skills.

5. Study Procedure

The researchers selected three schools for the study: one for males and one for females in Amman, four classes in each school, and two classes from Saudi Arabia schools. The sample of the study involved (281) students, (148) males and (133) females, of the seven grade students in Amman, and (82) females of the seven grade in Saudi Arabia. Almost half of the sample was selected as control groups, and the other as experimental groups, randomly specified. The classes in each school were instructed by the same teacher.

To assure the equivalence of the study groups a test about understanding of mathematical concepts related to grade six were applied as pre-test for all the groups. Analysis of the results reveals that there was no significant difference ($\alpha = 0.05$) between the mean of each subgroup: experimental verses control ; male verses female; Jordanian verses Saudi Arabia.

Teachers were trained to implement the programs for the development of creativity. They presented the school curriculum to all. The experimental groups were differentiated from the control one by presentin According to the Table 1, there is difference among the means of all subgroups on the (TTCT). To determine the significant of these findings, the researchers used General Linear Model to analyze the data they get from (TTCT) at a critical value of ($\alpha = 0.05$).g situations related to the aspects of mathematical creative thinking - the object of the study - students were informed of those aspects and the way by which such situations were handled.

They also used the Torrance Test for Creative Thinking (TTCT) to evaluate the mathematical creative thinking. The (TTCT) was applied after the program ended for the groups of the study.

6. The Results

The purpose of this study was to examine the effect of a suggested training program for the teachers of mathematics on developing the ability of mathematical creative thinking of the seven grade basic stage students. To answer the questions of the study descriptive statistics were used; the mean and the standard deviation were calculated for each subgroup.

The Table 1 presents the difference among the means of all subgroups on the (TTCT). To determine the significant of these findings, the researchers used General Linear Model to analyze the data they get from (TTCT) at a critical value of ($\alpha = 0.05$).

Table 1. Means and Standard Deviation of the Groups on TTCT

Group	Nat	Sex	Mean	Std. Deviation	N
Experimental	Saudi Arabia	female	85.56	20.68	41
		Total	85.56	20.68	41
	Jordan	female	75.88	23.19	76
		male	57.97	7.66	75
	Total	female	66.99	19.46	151
	Total	male	79.27	22.73	117
Control	Saudi Arabia	female	78.73	23.45	41
		Total	78.73	23.45	41
	Jordan	female	58.49	7.44	57
		male	63.23	14.91	73
	Total	female	61.15	12.40	130
	Total	male	66.96	18.96	98
Total	Saudi Arabia	female	82.15	22.24	82
		Total	82.15	22.24	82
	Jordan	female	68.43	20.09	133
		male	60.57	12.06	148
	Total	female	64.29	16.79	281
	Total	male	73.66	21.93	215
Total	male	60.57	12.06	148	
Total	Total	68.32	19.62	363	

Table 2 shows the following:

Table 2. Tests of Between-Subjects Effects (Analysis of Multi-variance)

Dependent Variable: total					
Source	Sum of Squares	df	Mean Square	F	Sig.
GROUP	1262.08	1	1262.08	4.38*	0.04
NAT	11262.88	1	11262.88	39.08*	0.00
SEX	3002.74	1	3002.74	10.42*	0.00
GROUP * NAT	1403.29	1	1403.29	4.87*	0.03
GROUP * SEX	8885.93	1	8885.93	30.83*	0.00
NAT * SEX	0.00	0	.	.	.
GROUP * NAT * SEX	0.00	0	.	.	.
Error	102883.3	357	288.1886		
Total	139285.3	362			

*: Statistical significant at ($\alpha = 0.05$). Table 2, shows that there were statistical significant differences on the overall score of creative thinking test, due to the following variables:

- Group variable, in favor of the experimental group, that had been trained to deal with, the situation that has to do with mathematical creative thinking.

- Sex variable, in favor of female, this means that the female students were better.
- Nationality variable, in favor of the Saudi Arabian.
- Interaction between the group and gender, that's means females were better than males in experimental group, but in the control group the differences seem to be not significant.
- Interaction between the group and nationality.

The results showed also that there were no significant differences on the overall score of creative thinking test due to: interaction between the nationality and gender, and interaction between the nationality, group, and gender.

7. Discussion and Recommendations

The present study was undertaken to determine the effect of a suggested training program for the teachers of mathematics on developing the ability of mathematical creative thinking of the seven grade basic stage students. The results led to the conclusion that the program was effective in improving the student-trainees' creative thinking. This results is completely consistent with relater literature and previous research conducted which states that creative teaching is flexible and imaginative and motivating and will improve by training [13], [26].

Regarding the sex variables, results showed that there was a statistically significant different in favor of female group; this means that female students had better results than male students. This is expected and supported by many reasons and indicators. A possible reason may be related to the fact that female are more hard working and get higher grades. One indicator comes from the University of Jordan yearbook which stated that from 65 advanced graduate students, 51 are females (78%),[33]. Another indicator comes from the research conducted in Jordan and Saudi Arabia which shows that female are highly motivated [2], [5].

Based in the results of this research findings, the following recommendations may be considered: Giving interest to creativity training and offering many different tasks because it has an impact on students' creative abilities. It is also recommended that the curricula of the faculties of educational sciences include courses specialized in teaching how to develop creativity in math teaching. Also it is recommended that mathematics curricula should include situations to stimulate creative thinking.

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The Effectiveness of Learning Cycle on Eleventh-grade Students' Chemistry Achievement in the United Arab Emirates

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Abstract

The study investigated the effectiveness of learning cycle (LC) on eleventh-grade students' achievement in chemistry. The random sample consisted of 97 students selected among the total number of four eleventh-grade intact classes (two classes consisted of only male and the other of only female classes). Lesson plans were redesigned to fit a three-stage LC (stages), and the study followed a pre- and post-test design. A teacher-made achievement test was used for collecting data. The data were analyzed using ANOVA and T-test. Results indicated that experimental group scored significantly higher than their counterpart in the control group in the chemistry achievement test.

1. Introduction

The UAE educational system follows a national curriculum, and textbooks are strictly implemented and guide the whole teaching-learning process. All schools in the UAE are segregated based on gender, but the curriculum and the textbooks are exactly the same for both male and female students. UAE have a population of four millions, but only one million or less are local citizens, while the rest are from all over the world mainly from India, Pakistan, Arab countries, and Europe. UAE is an oil-rich country producing around 2.5 million barrels of oil every day. It has the fourth largest reserve of oil in the world that consists of 98 billion barrels and around six trillions cubic meters of natural gas. Its economy is basically founded on oil and other oil by-products. In addition, UAE as a country has a huge potential to use solar energy extensively by transforming solar energy into other forms of energy. Thus, there is a huge demand of scientists and science-related or technology-related jobs.

In 1999, the UAE Ministry of Education explicitly stated its objectives for teaching science and specified that students should be creative, able to provide innovative solutions to local problems, and that they should also develop positive attitudes toward science. Nevertheless, students' achievement in science is far below the stated objectives. UAE, like many other countries around the world, suffers from waning interest among students to take the science track in high school. The annual statistics book (UAE, Ministry of Education, 2008/09) indicates that among 19393 eleventh-grade students (64%) selected the arts track and only 11141 students (36%) selected the science track. The number of students who attend science courses is a good indicator of positive or negative attitudes toward the subject [4], [6]. Based on this information and the needs of the country, science educators need to carefully examine and improve this situation.

As part of another study, a random sample of 60 national UAE male and female high school students was interviewed at the beginning of the study. The main purpose of these interviews was to explore students' opinions about science teaching in general. Most of the students expressed feelings of boredom towards science classes. They explicitly stated that they usually memorize materials that are unrelated to daily life and do not have any real meaning for them. Their complains focused on the way science is usually taught stating that most teachers in UAE schools follow the most traditional teaching method and restrict their teaching to lecturing. Based on the available evidence, it is generally agreed that achievement in science among UAE students. This constitutes a real problem in the UAE educational system that is not aligned with the main goals and the needs of the country. From this perspective, the present study attempted to design an effective teaching method and investigate its potential outcomes on students' understanding and achievement in chemistry.

2. Theoretical Background

Literature reviews of the 80's and 90's indicated that the most common teaching practices in the science classroom are lectures, question and answer sessions, and discussions of textbook materials [2], [8]. Despite the efforts in a number of countries towards a more student-centred learning, teaching practices in the science classroom did not change. The latest report published by the International Association for the Evaluation of Educational Achievement (IEA) of teachers based on the Third International Mathematics and Science Study (TIMSS) showed that the two predominant activities in science classes are teacher lectures and teacher-guided student practice [17].

Since the 60's, research has extensively discussed the effectiveness of (LC) in teaching. Many researchers mentioned the role of the Learning Cycle (LC) in increasing students' achievement, depth in understanding science concepts, and their advancement in critical thinking and understanding of science processes [9], [11], [18].

Literature reviews have shown that the LC is a teaching method that has positive impact on students' achievement and attitudes. In such a learning environment, students are usually active in the learning process and feel that science is fun. In addition, LC can improve students' conceptual understanding compared with traditional instructional methods [1], [7], [10]. Students can also fulfil their natural need as regard to their curiosity and their motivation to knowing. They can also construct knowledge by themselves with the coaching of teachers [12]. Libby had investigated the effectiveness of (LC) on introductory organic chemistry. He found that the experimental group had built stronger foundation in organic chemistry concepts which considered difficult from the students point of view [14].

Researches found that the discussion which takes place in an introduction phase gives students the time to reflect on the data they had in the exploration phase. This helped them to correct the misconception in basic concepts such as atoms, molecules, compounds, and solutions [19]. Moreover; research has supported the effectiveness of the learning cycle in encouraging students to think creatively and critically, as well as in facilitating a better understanding of scientific concepts, and cultivating advanced reasoning skills [11].

When gender was studied as an independent variable with attitude and achievement, researchers had reported different results. Some studies reported that male students had significantly higher attitude toward science than female, especially during the middle and high school years [4]. Some studies reported that male achievement in science was significantly higher than female achievement [4]. Lee and Burkam's compared gender based on science field. They found that male achieved better in physical science and female achieved better in life science. They found that with females, their score improved when laboratory was integrated when teaching them physical science [13].

In this study, the independent variable was the alternative teaching method, LC and the dependent variable is students' achievement in chemistry. The gender was studied as a secondary dependent variable. Therefore, the purpose of the study was to investigate LC as alternative teaching method, and study its effectiveness on 11th grade students', male and female, chemistry achievement.

2.1. Significance and Rationale for The Study

This study is investigating the (LC) teaching method, as an independent variable, on chemistry achievement as dependent variables. This study is significant for the following reasons:

1. The effectiveness of (LC) in learning science in general and in chemistry in particular has not been investigated in the UAE. Therefore; this study will fill a gap in the literature of science education.
2. This study aims at providing solutions to problems that the UAE science education is facing, and it may help other countries in the Middle East who suffer from the same problems that the UAE faces.
3. It is expected that teachers would be trained on this powerful teaching method.

4. Methodology

3.1. Subjects

In the UAE, students are segregated on the basis of gender. The difference in science performance between genders is rarely studied and no study has been conducted that related to the students'

performance when LC was used as a teaching method. The research sample consists of 97 students, female and male, their classes were chosen randomly among 11th grade classes in the UAE schools. In general students in the UAE are homogeneous. The schools follow national curriculum. Students speak the same language and have the same cultural background. In addition, most teachers are graduated from the same university.

The four classes were divided into two experimental classes and two control classes. In the experimental classes there were 50 students, 21 female and 29 male. On the hand, there were 47 students in the control classes 21 female and 26 male.

3.2. Instruments

The researchers used a multiple choice achievement test to test the hypotheses. The validity and reliability of the instrument had been established. Test validity was established through the following steps. First a table of content of the four unites had been constructed. Then, based on the table of content, twenty items measures the four units and different thinking levels were constructed. After that the test was reviewed by four supervisors in the UAE ministry of education and two science teachers in the UAE University. For establishing the reliability, the test was applied to two similar classes, one female and another male, using spilt-half method to calculate the reliability. It had been found that the reliability of the achievement test was 0.79.

In this study, the most influential variable, which could effect students' achievement in the UAE, was gender. The interaction of this variable with students' achievement was studied. This study was designed to answer the following question:

Does LC change the chemistry achievement score of the UAE students when it is used as an alternative teaching method?

To answer the question, three hypotheses were stated:

- H1: the change of mean achievement scores between male and female students under investigation is not affected by the combination of the teaching method used and gender.
- H2: The change of mean achievement scores between the groups under investigation is not affected by the teaching method used.

- H3: There is no significant difference between the experimental group and the control group when LC used as alternative teaching method.

5. Results and Discussions

In this study, students in the experimental group have been given the opportunity, for the first time, to explore the chemistry concepts. They were not passive recipients as they used to be. The data collected from the groups under investigation was treated statistically to investigate effectiveness of both teaching methods.

4.1. Achievement

The first purpose of the study was to investigate the effectiveness of LC teaching method on high school chemistry achievement. To achieve this goal, an achievement test was constructed covering the four units under study. After two months, students had taken the exam. Results in both experimental and control groups were analyzed based on the study hypotheses. The first hypothesis studied the interaction between the gender and group based on students' achievement. The first hypothesis stated that the change of mean achievement scores between male and female students under investigation is not affected by the combination of the teaching method used and gender.

Results of the analysis using a 2(gender) x 2 (groups) ANOVA had shown that there was an interaction between gender and group, however, this interaction was not significant; F value for the interaction between gender and group is equal 0.677 which is not significant at 0.01. As a result of that the null hypothesis was accepted. The result indicated that when LC was implemented as a teaching method, male students as well as female students in the experimental and control groups differently.

The second hypothesis studied the effectiveness of LC as an alternative teaching method. ANOVA analysis has indicated that there is a significant different between the experimental group and control group; F value for group was 6.469 which is significant at 0.05. See Table 1. As a result to that the null hypothesis was accepted. This result indicated that one of the teaching method, traditional or LC, has effected the UAE achievement score significantly. This result drives the researcher for

further investigation to see which group benefited more and to what extent.

Table 1. The interaction between gender and group based on students' achievement

	Square Sum	Freedom Degree	Mean Square	F Value	Sig.
Gender	76.645	1	76.645	0.103	0.749
Teaching	4831.248	1	4831.248	6.469	0.013
Bi-Interaction Gender x Group	505.367	1	505.367	0.677	0.413
Explained	5892.790	3	1964.263	2.630	0.055
Residual	69453.710	93	746.814		
Sum	75346.500	96			

The third null hypothesis aimed to uncover the group which benefited more from the teaching method. For this purpose, T-test was used to compare the two groups. The score mean difference of the experimental group and control group showed that the experimental group scored higher than their counterparts in the control group. The score difference between the traditional-teaching method and LC was 1.76. The analysis indicated that the t value was 2.88, which is significant at 0.005. This gave us an indication that LC was more effective than the traditional teaching method. As a result of the discussion above, the second null hypothesis was rejected and it was concluded that LC was more effective than the traditional-teaching method in teaching 11th grade chemistry students in the United Arab Emirates. These results agreed with the findings of Lawson's study [11]. See Table 2.

Table 2. T-test analysis for the third hypothesis

Group	No	Mean	Standard Div.	Mean Diff.	T Value	Sig.
Exp.	50	10.02	3.15	1.76	2.88	0.005
Con	47	8.26	2.89			

On the other hand, ANOVA analysis has indicated that there was no significant difference between genders when LC was used as alternative

teaching method; F value of gender was 0.103 which is not significant at 0.01. See Table 1.

In summary, students in the experimental groups achieved higher than control groups. LC gave students the chance to explore chemistry concepts and discuss them within their groups. Lawson, Abraham, and Renner [12] attributed the success of the learning cycle to a close correspondence with the way in which humans construct knowledge. Results of this study has indicated gender has minor effect in the students' achievement when LC was used as alternative teaching method; and this explain insignificant interaction between gender and teaching method.

When LC was implemented, students became active learners and chemistry concepts were understood. Consequently their achievement in chemistry improved. Students had experienced a new approach to learning chemistry concepts which different completely from what they used to. Their learning had been replaced from rote learning to meaningful learning. This result was supported by other studies which reported that students' achievement scores in the subject have improved [13], [15].

Novak has found that low students' achievement in chemistry was a result of rote learning; students were memorizing contents without understanding. Chemistry is a subject that students need to know key the concepts and establish connections among them. One very powerful way to help students make this connection is to give the chance to apply what they have learned in different sets. LC as a teaching method was applied in high school chemistry in the UAE to explore its effectiveness in achievement [20].

"Chemistry in the UAE is taught as cookbook" this is one of the female teacher summarizes how chemistry is taught. Actually, what she had said was expressed by most chemistry teachers, they explained how they teach chemistry. Teachers explain the chemical concept and demonstrate to the students the experiment related to the concept. In cases that students themselves have to do the experiment themselves. A full descriptions of experiment steps are given.

6. Recommendations and Implementations

To achieve the UAE Ministry of Education goals in teaching science, teachers need to explore other

teaching methods other than lecturing. LC has been investigated as an alternative teaching method in UAE students' achievement. The Study results encouraged the researcher to conduct workshops for chemistry teachers as well as other science subjects' teachers. Teachers who adapted LC, especially in their labs, have seen positive change in their students' achievement and toward chemistry.

Even though LC is not a new teaching method, however no research in the UAE has been conducted studying its effectiveness. It is believed that science field needs badly studies related to the teaching method because the Ministry of Education is implementing Harcourt textbooks series in learning science concept. The series is constructed based in improving students' science process skills, therefore teachers should be trained in other teaching methods such as LC.

This research could be extended to cover other topics in chemistry as well as other science subjects in different grades. Research would provide confident in science teachers to learn and use a very powerful teaching method.

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**Session 6D: Cross-disciplinary areas of Education,
Mathematics Education, Geographical
Education, Science Education**

Rural School parent Governors' Understanding of the Legislations and Policies that impact on School Governance (Man Duma)

Learning that empowers values: cases of social and health care sector and police administration training in Finland (Päivi Huotari, Olavi Kujanpää, Maarit Sihvonen, Jari Stenvall)

Algebraic Expressions and Robot Programs in Junior High Schools
(G. Barbara Demo)

Education for Peace: Naming and Shaming Violence in Sacred Texts
(Jane Fernandez-Goldborough)

The Tension and Interaction between the Concave and Convex Forms and the Coloured Elements in a Logical Composition Based on the Proportional System Derived from Islamic Ratio
(M.Yamani)

Rural School Parent Governors' Understanding of the Legislations that Impact on School Governance

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Abstract

The aim of this article is to investigate the rural school parent governors' understanding of the legislations and policies that impact on the school governance. The article reports on a study in which quantitative methodology was used to obtain information from rural school parent governors about their understanding of certain sections of the education legislations and policies that have a founding impact on school governance.

1. Introduction

Many states have established laws that govern education to include the parent component in the governance of schools [8]. Taking into account the high rate of illiteracy and semi-literacy in rural school areas, this article aims to investigate the rural school parent governors' understanding of the legislations and policies that impact on school governance.

The concept of education law is novel to many rural school parent governors and this lack of preparation makes the task of legal intervention foreign and uncomfortable to most rural school parent governors. It should be noted that no particular attention to the training of rural school parent governors in the education legislations is evident.

Training programmes for rural school parent governors in school governance will not only equip them with the tools they require for effective school governance obligations, but will also promote their status as effective school governors. Consequently, the training of rural school parent governors in the legislations that impact on school governance such as the Bill of Rights and the South African Schools Act will provide for more potent and constructive parent governors.

The purpose of this paper is to draw attention to issues such as the essentiality of the rural school parent governors' working knowledge of the legislations that impact on the school governance, the rural school parent governors' knowledge of the sections of the Bill of rights and the South African Schools Act and suggestions by the rural school parent governors that can improve their understanding of these legislations.

2. The Genesis and the Substance of the Bill of Rights and the South African Schools Act

2.1. Bill of Rights

Chapter 2 of the South African Constitution contains the Bill of Rights whose provisions are of particular importance to school governance as mentioned below:

2.1.1. Equality (Section 9). This section stipulates that there may not be unfair discrimination against anyone on the grounds of race, gender, sex, pregnancy, marital status, ethnic or social origin, color, sexual orientation, age, disability, religion, 2 conscience, belief, culture, language and birth [4].

2.1.2. Human dignity (Section 10). This section mentions that everyone has the right to have his dignity respected and protected. It is because of this section that Jones [4] submits that corporal punishment was outlawed in schools.

2.1.3. Privacy (Section 14). This section discloses that everyone's right to privacy is guaranteed. Jones [4] adds that a person cannot without justifiable reason be searched nor has his property searched.

2.1.4. Freedom of religion, belief and opinion (Section 15). In this section, it is stated that everyone has the right to freedom of religion, thought, belief and opinion and religious observances may be conducted at state or state-aided institutions, provided that those observances follow rules made by the appropriate public authorities, they are conducted on an equitable basis and attendance at them is free and voluntary [4].

2.2. The South African Schools Act

The South African Schools Act is the engine of school governance. It deals with the most important school governance policies, such as the following:

- Admission to public schools,
- Language policy of public schools,
- Freedom of conscience and religion at public schools,
- Suspension and expulsion from public school and
- Prohibition of corporal punishment [10].

It is therefore important to mention that parent governors that are ignorant of the legislations that

have a founding impact on school governance are a liability to the school as they do not effect school governance duties.

3. Method of Investigation

The researcher used the cluster and simple random sampling method to select twenty rural school parent governors in each circuit in the Midlands Cluster. Since this cluster has 10 circuits, 200 parent governors were selected as respondents. This method was favoured for its simplicity, unbiased nature, and its closeness to fulfilling the major assumption of probability, namely that each element in the population stands an equal chance of being selected [5, 6].

The questionnaire was used as research instrument. This quantitative methodology was chosen in the light of the purpose of the study, the kind of information that was required and the available resources [3].

The first sample population responses were 146 (73%) parent governors. After a follow-up, 24 parent governors returned the completed questionnaires to make total responses of 170 (85%) schools.

4. Results and Discussions

4.1 Educational Background of Rural School Parent Governors

Table 1. Educational background of rural school parent governors

Education Qualification	N	%
No Formal Schooling	110	65
Below grade 12	34	20
Above grade 12	26	15
TOTAL	170	100

Table 1 reveals that a high proportion of parent governors (65%) had no formal schooling. The high illiteracy rate of rural school parent governors adversely affects school governance, as they cannot meaningfully participate in the school governance activities.

4.2 Rural School Parent Governors' Knowledge of the Bill of Rights

Table 2. Rural school parent governors' knowledge of the Bill of Rights

Items		Good	Average	Poor	Total
Section 9 : Equality		0	34	136	170
	%	0	20	80	100
Section 10 : Human Dignity		0	34	136	170
	%	0	20	80	100
Section 14 : Privacy	N	0	68	102	170
	%	0	40	60	100
Section 15: Freedom of religion, belief and opinion	N	12	22	136	170
	%	7	13	80	100

4.2.1. Rural school parent governors' knowledge of Section 9: Equality.

Table 2 revealed that a high proportion of the respondents (80%) indicated that their knowledge of Section 9 was poor, whereas 20% indicated that theirs was average. That implied that most parent governors did not know how they could be involved in the implementation of school governance matters such as the prohibition of unfair discrimination [11].

4.2.2. Rural school parent governors' knowledge of Section 10: Human Dignity.

The Table 2 revealed that more than half of the respondents (80%) indicated that their knowledge of Section 10 was poor, whereas 20% indicated that theirs was average. This section deals with school matters such as the banning of corporal punishment in schools [9, 11].

4.2.3. Rural school parent governors' knowledge of Section 14: Privacy.

The Table 2, further on revealed that 60% of the respondents indicated that their knowledge of section 14 was poor, whereas 40% indicated that theirs was average. This section asserts that a person cannot without justifiable reason be searched nor has his property searched or his possession seized [9, 11].

4.2.4. Rural school parent governors' knowledge of Section 15: Freedom of religion, belief and opinion.

More than half of the respondents (80%) as indicated in Table 2, have a poor knowledge of section 15. In this section it is stated that religious observances may be conducted at state or state-aided institutions, provided that those observances are conducted on an equitable basis and attendance at them is free and voluntary [4].

4.3. The Rural School Parent Governors' Knowledge of the South African Schools Act

Table 3. The rural school parent governors' knowledge of the South African Schools Act

Items		Good	Average	Poor	Total
School's policy on learner admission	N	0	34	136	170
	%	0	20	80	100
School's policy on language	N	0	34	136	170
	%	0	20	80	100
School's policy on religion	N	170	0	0	170
	%	100	0	0	100
School's policy on the suspension and expulsion of learners	N	0	48	122	170
	%	0	28	72	100

4.3.1. Rural school parent governors' knowledge of the school's policy on learner admission.

The Table 3 revealed that a majority of the respondents (80%) indicated that their knowledge of the school admission policy is poor. This section states that a public school must admit learners without unfairly discriminating in any way [10].

4.3.2. Rural school parent governors' knowledge of the school's policy on language.

It seems that the parent governors in this study have very little knowledge of the school language policy.

4.3.3. Rural school parent governors' knowledge of the school's policy on religion.

All parent governors in this study are knowledgeable about the religious policy at the school at which they serve. As can be seen from Table 3, they all (100%) indicated that their knowledge of the school's policy on religion is good.

4.3.4. Rural school parent governors' knowledge of the school's policy on the suspension and expulsion of learners.

The Table 3, in conclusion revealed that more than half of the respondents (72%) indicated that their knowledge of the school's policy on the suspension and expulsion of learners was poor. In this section, it is stated that the school governing body may suspend a learner from school and the expulsion of the learner may only be effected by the Head of Department, [10].

In conclusion, one needs to note that a high proportion of the respondents in this study have a poor knowledge of the South African Schools Act. This Act is the engine of school governance. It is the de facto kingpin of parent governors' involvement in school governance.

4.4. Essentiality of the Rural School Parent Governors' Working Knowledge of the Legislations that Impact on the School Governance

In this section, parent governors were required to determine the essentiality of their working knowledge of the legislations that impact on school governance

Table 4. Essentiality of the rural school parent governors' working knowledge of the legislations that impact on the school governance

Items		Agree	Disagree	TOTAL
Learners whose parents fail to pay school fees must not be admitted to school	N	101	69	170
	%	59	41	100
Pregnant girls must be allowed to learn until they give birth	N	48	122	170
	%	28	72	100
Dagga smoking learners can be expelled from school by the parent governors	N	110	60	170
	%	65	35	100
Only the principal is allowed to use the cane / stick to punish troublesome learners	N	127	43	170
	%	75	25	100
All learners must attend religious morning assembly in school	N	146	24	170
	%	86	14	100

4.4.1 Learners whose parents fail to pay school fees must not be admitted to school.

The Table 4 revealed that more than half of the respondents (59%) indicated that they agreed with the statement that learners whose parents fail to pay

school fees must not be admitted to school. This is expected of parent governors who indicated in Table 3 that their knowledge of the school admission policy is poor. The admission policy as per section 5 of the Schools Act, stipulates that the school must not discriminate against learners, who must be 5 admitted even if their parents cannot pay school fees.

4.4.2. Pregnant girls must be allowed to learn until they give birth.

The Table 4 revealed that more than half of the respondents (72%) indicated that they did not agree with the statement the pregnant girls be allowed to learn until they give birth and 28% indicated that they agreed that pregnant girls should be allowed to learn until they give birth. This section prohibits unfair discrimination directly or indirectly against anyone on one or more grounds, including pregnancy [4, 11].

4.4.3. Dagga smoking learners can be expelled from school by the parent governors.

As shown in Table 4, the majority of the respondents (65%) agreed that dagga smoking learners can be expelled from school by parent governors. In terms of the Schools Act, only the Head of Department can expel a learner from school.

4.4.4. Only the principal is allowed to use the cane / stick to punish troublesome learners.

Table 4 further on revealed that a majority of the respondents (75%) indicated that they agreed with the statement that only the principal is allowed to use the cane / stick to punish troublesome learners. This response is a cause for a worry as Section 10 of the South African Schools Act clearly states that no one is allowed to administer corporal punishment at a school to a learner [11].

4.4.5. All learners must attend religious morning assembly in school.

In conclusion, Table 4 showed that a majority of the respondents (86%) agreed that all learners must attend religious morning assembly in school. The strong support for this item indicates that parent governors do not know Section 15 of the South African Schools Act, which stipulates that the attendance of religious observances in a school is free and voluntary [2].

4.5. Parent Governors' Suggestions on Improving Their Understanding of the Legislations that Impact on School Governance

In an open –ended question, parent governors were required to make suggestions on what can be done to improve their understanding of the legislations that impact on school governance.

Their responses were ranked in the order of frequency as follows:

- The Department of Education should organize training workshops for parent governors (73%).
- Schools should provide translation services for parent governors who know only the indigenous language (68%).
- Principals should motivate parent governors to read the Bill of Rights South African Schools Act documents (65%);
- Schools must offer transportation to parent governors to attend training workshops (60%)
- Parent governors must be remunerated for attending training workshops (56%).
- Local leaders such as councillors and traditional leaders should assist in the training of parent governors in school governance legislations (51%).

5. Summary of the Findings

The summary that follows highlights the salient issues that emerged from the study.

5.1. The Rural School Parent Governors' Educational Background

The high illiteracy rate of parent governors negatively affects school governance, as they cannot successfully play their part in school governance activities. Monadjem [7] explains that the parent governors' clear understanding of the legislations and policies can enhance effective school governance, and since illiteracy is a national problem, the Department of Education should vigorously and urgently initiate literacy classes for rural school parent governors.

5.2. The Rural School Parent Governors' Knowledge of the Legislations that Impact on School Governance

The study reveals that the majority of rural school parent governors have poor knowledge of the legislations that impact on school governance. The study in conclusion, found that the majority of the rural school parents agreed that all learners must attend religious morning assembly in school, despite the stipulation in the South African Schools Act that the attendance of religious observances in a school is free and voluntary [4].

In order for schools to be effective and well managed, rural school parent governors need thorough training on the implementation of the precincts of the legislations that impact on school governance such as the Bill of Rights, South African Schools Act, the school constitution, admission policy, language policy, religious policy, code of conduct for learners, and so forth. It is hoped that, after training, the parent governors will come to an understanding of a democratic approach to school governance.

6. Conclusion

Rural school parent governors should be playing a significant role in school governance activities, development of the school admission policy in consultation with the Department of Education. It also includes promotion of the best Parent governors are therefore indispensable assets and resources in the successful formulation and implementation of school policies. Since most rural school parent governors are farm labourers, training sessions during the weekdays would be impossible.

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Learning that empowers values: cases of social and health care sector and police administration training in Finland

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Abstract

The aim of this paper is to study what kind of organizational culture values are transmitted in training with its objectives in working life readiness, and how do they correspond to the working life values and what explains this. In other words, does training that provides professional expertise empower the cultural values needed in working life. The empirical material is gathered among students with working life experience and studying in sectors differing from one another, social and health care and police administration. The theoretical basis of the study is Hofstede's Onion Model, according to which the core of an organizational culture is made up of values that are often unconscious conceptions of good and evil. Hofstede presents four cultural dimensions that are Power Distance, collectivism vs. individualism, femininity vs. masculinity, and Uncertainty Avoidance. Training provides students with a foundation of values that they will bring along into working life. The results of the study will answer the questions what kind of value basis training will provide for students and is this explained by. On the basis of the new information, higher education institutions can reform their teaching and examine how the training is corresponding to the needs of working life.

1. Introduction

The aim of this paper is to study what kind of organizational culture values are transmitted in training with its objectives in working life readiness, and how do they correspond to the working life values and what explains this. In other words, does training that provides professional expertise empower the cultural values needed in working life. The empirical material is gathered among students with working life experience and studying in sectors differing from one another, social and health care and police administration, and these students are compared with one another as groups. The material is gathered quantitatively.

The theoretical basis of the study is Geert Hofstede's Onion Model [1], according to which the core of an organizational culture is made up of

values that are often unconscious conceptions of good and evil, right and wrong. Values are something that is difficult to observe or difficult to discuss. Hofstede presents four cultural dimensions that are Power Distance, collectivism vs. individualism, femininity vs. masculinity, and Uncertainty Avoidance. The dimensions of culture defined by Hofstede are emerging as dimensions of values that affect the lives of organizations. They have not been utilized in research on training.

According to Hofstede, Power Distance can be characterized to measure to what extent do those executing the least power in an institution (e.g. family) or an organization (working place) in a country expect or approve uneven distribution of power. In a collectivist society, the benefit of a group precedes that of an individual but, as Hofstede points out, there are also societies where the benefit of an individual precedes that of a group. Hofstede defines this dimension as follows: individualism is connected with societies where the ties between individuals are loose. Everybody is expected to take care of himself and those close to him. The dimension of masculinity vs. femininity examines the approval of self-assertive or modest behaviour, and this has a connection with the role model offered by parents. Uncertainty Avoidance is a dimension aptly described by Hofstede: different is dangerous. Essential to uncertainty is that it is a subjective experience, but it can also be shared by the members of a society or a working community.

Working life is faced with constant change that also places high demands on workers. Training provides students with a foundation of values that they will bring along into working life. The workers that have completed training will be using these values, for instance, either to develop the functions of their working place and mould the development of the society or to oppose it. With the concordance development in training structures, will there also be changes and increasing concordance in the values provided by training?

2. Background

There are major administrative changes in progress in Finland and they are moulding the

operations of the public sector also concerning the social and health care sector and police administration. As a rule, social and health care services are administered in Finland by municipalities and they enjoy strong self-governance. Police administration, on the other hand, is a part of state administration even at the local level.

The local administration level is currently being moulded by the PARAS project and the police administration by the PORA project. In addition, Finland is engaged in the Bologna Process [2]. The PARAS project involves the structures and services of municipalities.

According to the PARAS legislation, the units offering the basic health care services as well as those of the closely related social services must cover areas with at least 20,000 inhabitants. Some of the Finnish municipalities arrange the basic health care services themselves; some have common health care centres or cooperation in the arrangement of on-duty services, while others arrange all their basic services within cooperation areas. Administration is typically scattered, with plenty of different variations [3]. Within the PORA [4] project, police administration has been developed so that the 90 district police departments are reduced in number to 24 police department. Licensing services are increasingly provided as joint services. Cooperation and specialization in demanding tasks is being developed between police departments.

Training also changes along with the administrative structures. Finnish higher education institutions are engaged in the Bologna Process with the aim to create a common European higher education area by the year 2010. The objective is to make European higher education institutions attractive, and this is aimed at by comprehensible and streamlined examination structures, the introduction of common study unit systems, increased mobility, quality assessment, and international networking.

3. Results

The results of the study will answer the questions what kind of value basis training will provide for students and is this explained by, for instance, the experience of receiving high-quality training or the identification of strong professional identity. On the basis of the new information, higher education institutions can, as necessary, reform their teaching and examine how the training is corresponding to the needs of working life.

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Algebraic Expressions and Robot Programs in Junior High Schools

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Abstract

In our ICT activities in junior high schools pupils program the RCX and NXT Lego bricks using a Logo-like language supplemented by a program development environment specifically implemented for young students. In their first programs, pupils mainly aim at moving their autonomous robots. We describe how teachers and pupils have analyzed with us a number of robot programs, performing a static analysis of the code, for specifying the length of the path a robot covers when a program is executed. When sensors are used this length is specified as an expression containing variables. The analysis associating algebraic expressions to robot programs can be used as a teachers support in motivating elementary algebra, a typical subject addressed in junior high schools. In this activity robotics is used as means to concretely manipulate topics of traditional disciplines. It is integrated in standard school curricula and becomes an active learning environment.

1. Introduction

Programming autonomous mini robots is a helpful educational tool when it is used to implement an active learning approach to concepts from standard disciplines in schools. Examples in [4, 7] describe robot activities related to geography and counting abilities in primary schools while the use of robots as a general learning environment is discussed in [5,13]. In [6,12] a step-by-step methodology is suggested where learning a textual Logo-like language for robot programming is coordinated with the parallel acquisition of logical and linguistic abilities in schoolchildren native language. In earlier papers we described the NQCBaby language for educational robotics and the program development environment we offer to teachers and pupils to write NQCBaby programs and translate them into the NQC language by D. Baum for the Lego RCX brick [1]. More recently we described activities introducing to educational robotics pupils of the age range 11-14 using the Lego NXT brick where robot programming is integrated in a junior high school standard curriculum. In that project we began an analysis to

perceive and evaluate with pupils the different degrees of generality of solutions to a given robotics problem [18].

This paper concerns activities carried out during the school year 2008-2009, again with pupils in junior high school, new to robot programming. In this project we aimed at verifying whether robot programming, through relating specific solutions to more general ones, can help in motivating the traditional study of elementary algebra introduced in junior high schools. To recognize different degrees of generality of programs we have statically analyzed, with teachers and pupils, their movement statements. By this analysis, expressions are synthesized specifying the length of the paths that the robot can perform during one execution of the analyzed code. Roughly, an expression containing variables is synthesized if in different runs of the analyzed program a robot covers paths with different lengths. Pupils are aware or can easily verify whether paths produced by different runs of a program have the same length or not. Observing that expressions without variables are coupled with programs producing the same length paths while linear algebraic expressions, with variables, correspond to programs producing different length paths can become an introduction to linear algebra. The analysis process produces a motivation for linear algebra, often considered as a syntactical game by pupils.

The idea is inspired by the researches of Gutierrez, Mavrikis and Pearce on a “learning environment for promoting structured algebraic thinking in children” [8]. Distinctive aspects of our work are the different context, as we refer to robot programs, and the possibility of working on more general algebraic expressions, having nested levels. Nevertheless, we do not recommend pupils write programs with several nested loops that produce algebraic expressions with correspondently several nested levels of parenthesis.

In Section 2 the NQCBaby language is introduced and some examples are shown of programs used in Section 3 to illustrate the technique for rewriting segments of programs into algebraic expressions. As a conclusion some of the recent initiatives for a renovated conception of computing

in Italian schools, are sketched in Section 4. Educational robotics contributes to defining this new conception that will result in a deeper digital literacy for our young students. Their digital literacy will be “to the one of pupils only using any Office suite or similar, as the musical technique of piano players is to the one of stereo players”: from the *Pianos Not Stereos* paper by M. Resnick, Bruckman and Martin [14].

2. Basic Tools

Our educational robotics activities have so far particularly concerned primary and junior secondary schools. In primary schools we propose a textual programming language because the parallel learning of two languages having the same format, the native and the formal language, can help pupils develop better general linguistic abilities. The language is called NQCBaby from NQC (Not Quite C) a most used textual language for RCX bricks developed by D. Baum in 2004 [1]. NQC was used as the first textual programming language in schools. Judged too difficult for an introduction to robot programming, after some activities, a mini-language approach was considered more suitable and the Logo-like language NQCBaby was developed [4, 6, 12]. According to the mini-language approach, NQCBaby is not a complete language because we do not intend to make children become good programmers but rather to give them the opportunity to use concrete robots for doing concrete programming [2, 7].

Our current work has the goal to provide schools with one common child-oriented textual language, to be used for programming the different robot types children use most suitable to the different ages. It is a textual language with primitives taken from children natural language following the Logo philosophy. Indeed our approach is to make children use easier languages rather than building tools to make easier the existing languages too difficult for pupils. An approach in this direction uses the “wooden icons” for helping schoolchildren to compose syntactically correct programs in the iconic programming language proposed in [10].

Pupils write their NQCBaby programs using the Integrated Development Environment (IDE) whose interface is shown in Figure 1, developed by students of the University of Turin. The pedagogical methodology integrated in the IDE already available to schools, provides a gradual introduction of pupils to NQCBaby with language enrichments from children at beginning-to-write level that use NQCBaby0 to NQCBaby6 level, usually for junior high schools. NQCBaby0 is the kernel of the language: it is the textual form of the button commands on the Bee-Bot back, a small robot children can use when not yet able to write as described in [4]. The “white board” central to the

window of our IDE is where children write their NQCBaby code. The toolbar shows icons for writing a new code sequence, opening a directory, saving or printing the NQCBaby sequence. The icon “gear” is used for translating the NQCBaby code. Errors are reported at the bottom with code line.

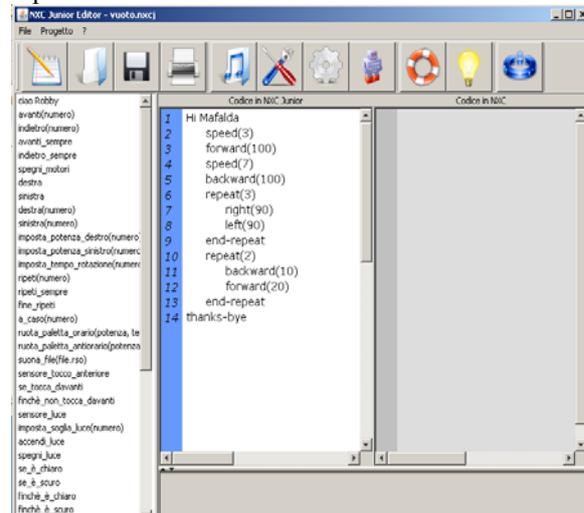


Figure 1. The interface of the program development environment

Before opening the IDE the user specifies the language level (NQCBaby1, NQCBaby2 ... NQCBaby6) to be used and the robot composition, i.e. which types of sensor or components are present on ports and actuators.

The NQCBaby-1 level only contains: forward(t), backward(t), right(t), left(t) primitives, for making the robot move forward or backward and turn right or left for t seconds (or different parts of seconds as specified on opening the system), plus the start and end commands: respectively Hi <robotName>, to give a different name to the robot of each group of pupils, and thanksBye. It is convenient that children write their very first programs as simple (even random) sequences of move commands, with the only goal of checking the motion produced by such command sequence, thus verifying the assembly of hardware components and starting to concretely learn the language semantics. The following Prog-1 is an example:

```
Prog-1: Hi Mafalda forward(20) right(10)
backward(9) thanksBye
```

In Prog-1 Italian primitives are translated to English and parameters of moving statements are tenth of seconds as in the other examples following. Each next level of the NQCBaby encapsulates the previous one and deals with either a different robot needing/allowing new primitives or new hardware components, sensors or actuators. In primary school, the gradual introductions of new components, for example sensors, and the related language primitives for using them in robot-programmed behaviours comply the advances of schoolchildren logical and linguistic abilities as described in [6].

One of our activities concerned an exhibition where each robot had to show the geometrical shapes children had “taught” her/him during the year. Most groups came out with programs where several geometrical figures are drawn on the floor one after the other as coded in the program, always the same in the same sequence, as in the following program.

```
Prog-2: Hi Susi
      repeat(4)
        forward(12) left(10)
      end-repeat
      repeat(3)
        forward(9) left(12)
      end-repeat
      thanksBye
```

A `repeat(n)` statement makes its body (i.e. the statements from that statement to its corresponding `end-repeat`) be repeated n times.

When we introduce sensors (touch, light and sonar sensor) the NQCBaby language is enriched with statements to deal with them, i.e. for specifying to which port a sensor is connected and for verifying sensor reactions to the environment. In Prog-3 below, a touch sensor is declared on port-1 of the brick. We asked pupils to think of a program that makes the robot move on the floor and turn when touches an obstacle. Prog-3 is the program produced by one group. Before or while the robot is executing Prog-3, pupils decide where to put the obstacles (often these simply are the feet of the pupils).

```
Prog-3: Hi Zoe
      port-1 is touch
      forward-always
      repeat-always
        if-touches
          right(5) forward(3)
          left(5) forward-always
        end-if-touches
      end-repeat
      thanksBye
```

In Prog-3 the `forward-always` statement switches on the engines of both wheels in the forward direction. Thus the robot goes on until something is touched (`if-touches` becomes `true`) that makes the robot go `right(5)` etc. With this program the robot goes on (`repeat-always`) until it is stopped from the outside.

In the next section other examples of NQCBaby programs are given.

3. Expressing the length of robot paths

If we stick a pen to each brick, so that the pen marks the floor while the robot is moving, we can measure the pen mark on the floor at the end of the program execution. In this Section we discuss how we can also give an answer before a robot executes a program by analyzing the movement statements in the given program.

3.1 Examples

After pupils write their first programs, they are required to think whether by analyzing the code it is possible to specify the length of the path covered by each one of the robots during one execution of these programs. We assume that for every run the external (to the brick) environment conditions are the same, in particular we assume that each group always refer to the same robot moving on the same floor with the same battery charge level. Under these conditions when the robot of a single group of pupils executes Prog-1, seen in the previous Section, it covers a path having the same length for every run. Robots of different groups executing Prog-1 may cover a path of a different length, because of different wheels for example. Each group can precisely say the value of its robot path length. Aiming at having the length expressed in a more general way, independent on the robot, something like the following turned out from our discussions with pupils:

α : $\text{Length-for-forward}(20) + \text{Length-for-right}(10) + \text{Length-for-backward}(9)$

where $\text{Length-for-forward}(20)$ is the measure of the path covered by one of the robots in 2 seconds, similarly for the rest of α .

In Prog-2 we find twice the code pattern: `repeat(number) ... end-repeat`. Thus the length of the path covered by the robot during one execution turned out, expressed in the α -form, like the following:

β : $4[\text{Length-for-forward}(12) + \text{Length-for-left}(10)] + 3[\text{Length-for-forward}(9) + \text{Length-for-left}(12)]$

The lengths of the paths a given robot covers during a run of programs Prog-1 and Prog-2 are constant for each program. With Prog-3 pupils expect and can verify that the path the same robot covers can be different for every different execution of the program because it depends on where the obstacle are positioned. We asked pupils to think of how we can specify the length of the path covered by the robot for an execution of this program **with three obstacles** on its way. The following expression has been formulated:

γ : $\text{Length-for-forward}(x_0) + [\text{Length-for-right}(5) + \text{Length-for-forward}(3) + \text{Length-for-left}(5) + \text{Length-for-forward}(x_1)] + [\text{Length-for-right}(5) + \text{Length-for-forward}(3) + \text{Length-for-left}(5) + \text{Length-for-forward}(x_2)] + [\text{Length-for-right}(5) + \text{Length-for-forward}(3) + \text{Length-for-left}(5) + \text{Length-for-forward}(x_3)]$

In this expression we have seen for the first time the use of variables x_0 , x_1 , x_2 and x_3 :

- x_0 , x_1 and x_2 get a precise value after pupils decide where to put the three obstacles and these values can be different for every execution of

Prog-3 if positions of the three obstacles are different

- Length-for-forward(x3) corresponds to the path the robot covers after the third obstacle, when it executes: right(5) forward(3) left(5) forward-always and it is stopped from the outside.

For the geometrical shape problem solved with Prog-3 by a group of pupils, another group, after discussions and trials, wrote Prog-4 that uses the light sensor and the statement repeat-while-bright to verify its status. The program is shown here in a short version where we do not have a code sequence concerning triangles, similar to the one shown here for quadrangles:

```
Prog-4: Hi Mafalda
        port-2 is light
        forward-always
        repeat(4)
            repeat-while-bright
                forward-always
            end-repeat
        left(11)
    end-repeat
thanksBye
```

In Prog-4 the robot Mafalda, equipped with a light sensor on port 2, starts moving on the class floor and for four times repeats the going-forward command while the light sensor registers a bright environment. When the bright condition becomes false, for example because a black paper is bought in front of the light sensor, the robot goes left and then again straight until another dark condition is found. For each run of the program, one different pupil of the group is Mafalda's driver thus in charge of deciding her path, i.e. deciding which four sided geometric figure perimeter the robot has to move on by deciding when to use the black paper. This program was run with a robot that by left(11) moved about 90° so that the robot roughly moved on a rectangle perimeter decided by her current pilot assuming the pilot pays attention at letting Mafalda close her path. The following Prog-5 is equivalent to Prog-4:

```
Prog-5: Hi Mafalda
        port-2 is light
        repeat(4)
            repeat
                forward-always
            until-dark
        left(11)
    end-repeat
thanksBye
```

Like with previous programs, pupils can verify that the path the robot covers can be different for every different execution of Progr-4 and Prog-5. For an execution of this program we have:

(Length-for-forward(x4)+Length-for-left(11)) +

(Length-for-forward(x5)+Length-for-left(11)) +
(Length-for-forward(x6)+Length-for-left(11)) +
(Length-for-forward(x7)+Length-for-left(11))

In this expression we have the variables x4, x5, x6 and x7. Again, first three variables get each a precise value after the robot pilot decides when to use the black paper and these values can be different for every execution of the program.

Combining the analysis of the programs here described and how the robots actually execute them, we can compare with pupils the different solutions to the same problems for considering how general they are. Normally pupils first propose solutions specific to a given problem, in a second step we can drive them to think to more general solutions. In our activities, pupils were first asked to write a program for the robot could go around a box, then modify that program for the robot could go around a chair, then around a table. In the end we had groups finding solutions where the robot circumnavigates any rectangle with programs similar to Prog-4 above.

3.2 Other achievements and future work

Given the same problems to work on, schoolchildren groups begin planning how their robot will move, write short code sequences to recall how long are the distances covered by their robot for a statement. Each group draws several designs for deciding the trip their robot will cover. From the experience each pupil goes through while trying to plan and implement the robot show, results particularly relevant for her/his following education life are:

- working together to understand the given problem and usually realizing that his/her other group members can differently understand a given non-standard problem. Non standard problems are an experience that young people have very little chance of getting in touch with because they are usually given problems with unique solutions,
- understanding these possibly different interpretations of a problem and making them explicit,
- comparing and exchanging competencies also by reading the program of another group of students in a class and then saying how they think the robot will move
- finding to which problem is a solution what is coded in a program when they find out that it is not a solution to the case meant by other children in their group or in the class.

Discussing different interpretations of a given task is the beginning of learning that having questions on a subject is the true starting step of the learning process. For the robot show mentioned above, one group only has produced a more general solution to the given task but programs of all the

other groups are correct solutions to different tasks. For a future show, we are planning to present all programs in a sort of game where the public has to pair the six code sequences with six different tasks.

The above analysis of robot programs has driven pupils to think about mathematical generalization with direct connections to their current algebra curriculum. We are now working on the automatic synthesis of algebraic expressions that specify the length of (part of) the robot path when a program is executed as discussed in this paper. Our next goal is to develop a software tool to be integrated in our IDE that will support teachers and pupils during the analysis described in this paper for motivating algebraic expressions.

4. Conclusions

Up to now technology in schools has been most normally limited to the use of software applications or during laboratory activities having little connection with what pupils learn in regular class hours. Here we have described an activity integrating mini-robot programming in the standard curriculum of a second grade junior high school in Italy. Integrating technology in school curricula means that pupils use it as a tool for building activities exploiting or motivating concepts present in traditional curricula. This integration contributes to a new conception of computing in schools and introduces students to a digital literacy richer than the one they are nowadays usually exposed to. Solving problems and explicitly specifying their solutions as combined solutions of sub-problems, with a language pupil oriented but formal, as to be understood by a mini-robot, is a peculiarity of this future digital literacy. In this respect, educational robotics shares the aim of several new ICT projects initiated in Italian primary and junior high schools during 2008/2009 school year. Explicit aim of some proposals is developing computing competencies such as problem solving and, in general, logical skills for improving pupils' achievements particularly in scientific subjects. Actually, already in school-year 2001-2002, F. Honsell and C. Miolo promoted one of the first projects aiming at cultivating in schools computing as a science that involved fifteen primary schools in the Friuli Italian region [9]. Yet, during the school-year 2008/2009 we had the first nation wide initiatives in schools under this approach. The Italian Kangaroo Association organised the First Italian Kangaroo Informatica contest for junior high schools, 5-7 May 2009. A. Lissoni with a group of researchers from the Milano University collected several problems, or as they call them "quesisti", to show in junior high schools what kind of questions computing concerns [11]. Also Problem Solving Olympic Games have been supported for the first time during the current school-

year by the Italian Ministry of Instruction, University and Research (MIUR) for the fifth degree of the Italian primary school and the third degree of the junior high school after the initiative of G. Casadei [3]. These projects share the idea that pupils must get used to a structured i.e. algorithmic way of dealing with problems and of solving them. Some projects also introduce young students to data structures typical of computing thus showing how properly structuring the data of a problem influences finding a solution. According to the title "Data+Algorithms=Programs" of one of Wirth's books, in these projects pupils acquire programming competencies.

Other approaches explicitly address programming in primary and secondary high schools. Educational robotics is one of these. R. Didoni experiences with robots began around 2001 and he is now organising with G. Di Benedetto a yearly Robotics Festival in Milano area with the Friend-Robot School-Net [16]. In Europe different projects concern robots beginning with the well known Roberta project born in Germany around 2002 and now developed in several European countries [15]. Another European project called "Teacher Education on Robotics-Enhanced Constructivist Pedagogical methods" (TERECOP) involves eight European countries, Italy is one of them, working together for three years for developing educational robotics competencies in teachers in k-12 schools [17].

We have proposed activities with different types of autonomous mini robots to children of different ages: in kindergarten, primary and junior high schools [4]. Pupils in pre-writing age program by pushing buttons, then use different iconic languages or the NQCBaby textual Logo like language sketched above. An advantage of programming autonomous mini robots is that pupils face problems, to be solved and programmed, they understand and are interested in solving. Beginning problems with robots are based on making them move in different environments: avoiding obstacles or doing different actions depending on where obstacles are positioned or depending on when a noise is made or similar. These moving-activities are something that young people know quite well by themselves. Teachers do not have to find problems. Robots have wheels and, consequently, pupils first of all want to write programs that make them move. While designing, writing and verifying programs for controlling the motion of mini-robots, schoolchildren and students both acquire programming competences in a young people oriented context and have the chance of concretely manipulating concepts present in their school curriculum with a constructivist learning approach. Educational robotics is a learning environment where robot programming activities are integrated into standard subjects rather than being a form of ICT added to school curricula as one more,

separate, subject or as a number of (software) tools for practicing topics from standard subjects. Until nowadays, such an integration has rarely been present in the proposals for introducing computing technologies in schools, though considered a most fruitful educational usage of computers already in Papert's researches of the 70's.

The activity described in this paper, is an example of how robot programs written by pupils can provide an active learning context of a traditional curriculum subject in junior secondary schools.

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Education for Peace: Naming and Shaming Violence in Sacred Texts

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Abstract

Terrorism has impacted on the ways in which we think about ourselves in relation to the Other. It has forced us to measure and evaluate many of our assumptions and exposed many of our underlying prejudices. As teachers, we have a responsibility to revise our pedagogical frameworks and investigate appropriate means of counteracting prejudice and violence in the light of the changing needs of our times. One of the significant challenges we are faced with today is the growing phenomena of sacralised violence. This paper is interested in our revisiting, exposing and counteracting the embedded violence in sacred texts.

1. Introduction

Classroom practice sees the common use of literature and stories as a way of mapping cultures and unpacking notions of identity. We look to stories, to pictures, to text, in a whole consortium of mediums, to tell us about ourselves. But what do our stories tell us about ourselves, and about those we call Others? How are we implicated in the stories we write and share with regard to questions of culture, race and identity? How do our stories advance stereotypes and prejudices? What kind of violence do our stories conceal?

If many of our stories appear to be cyclic, they appear to conform to an unconscious and seemingly subscribed framework of human survival. Judging from our myths, something of Jung's Collective Unconscious appears to provide for us a pool of archetypes through which we filter and manage our deepest fears and desires. Given our common predispositions, our inherited and intuitive universal understanding of symbols and images and universal themes, the crucial question involves why we have not found an antidote for the rivalries that consume us.

What role can teachers play in unpacking and interrogating prejudice? Can we not reach across cultural and religious divides to find ways to celebrate difference? How can we identify and

celebrate the hybrid identities that we have achieved as markers of the twenty-first century? My interest lies in our key role as teachers mediating between the real world and the worlds we confront in our classrooms. In this regard, the socio-cultural debates and dialogues which have come under recent scrutiny over these last several decades are a vital resource in enabling us to prepare our students for the challenges of the twenty-first century, of which the most paramount is the threat/reality of violence and global conflict. Arguably, this violence is fuelled through different forms of prejudice.

At the heart of all prejudice be it racism, religious fundamentalism or gender is a fear of difference. It is this fear of the Other and its related violence that my paper is interested in. The force and brutality of Nazi racism have baffled us for several decades and since then, "researchers have tried to explore and explain ethnic prejudice" [1]. Recent scholars such as Guillaumin, while challenging established ideas of race, ascertain that racism keeps race alive even as race itself has become a contestable concept [2]. Race is constructed, engineered and disseminated through a system of fantasy and difference, a system bred through dualism and "epidermal" prejudices. For instance as Nasar Meer points out, "a white/black dualistic conception of race has, for a long time, provided the predominant paradigm for the study of ethnic minorities in Britain"[3]. But Britain is not unique in this regard. Since Edward Said's *Orientalism*, scholars have raised in varying degrees the ways in which the East and people of colour are commodified through labels such as "inferior", "savage", "irrational" [4]. Recent spates of terrorist attacks have deepened the stratum of prejudices and stereotypes aimed at people of eastern and more specifically Middle-eastern or South Asian appearance. Despite the heavy traffic of people movement across the globe, these labels persist through a politics of Othering managed primarily through a system of binary absolutes.

My question involves the extent to which these binary absolutes filter into the language and the psychology of our classrooms. Do we compartmentalize the East or West, the holy and unholy, or civilized and uncivilized? What indeed are the "ethical" dilemmas of "explicit presentations

of cultural differences in the classroom which may lead to “othering” or essentializing the cultures studied” [5]. How do our stories feed these categories, creating false pictures of human society as divided into bi-polar categories of good and evil, burdened by an incurable Manichean mania for opposites? If we looked at language, our language itself carries a burden: a diet of binary assumptions that we are schooled into from an early age.

2. Literature Review

One of the central paradigms of language methodology is its dependence on a contrastive framework. Citing G.H. Mead (1967), Crossley asserts that language acquisition is “central to self-hood”, i.e. a “temporal, reflective process, in which the individual (‘I’) turns back upon and reflectively objectifies their self as ‘Me’”. “By means of language, the child is able to think and simultaneously gain access to their own thoughts”. A further development of this process is “the ability of the child to ‘take the role’ or ‘the attitude’ of ‘the other’ for the development of self-hood. If, as children, we are to achieve full self-hood, [Mead] maintains, then we must come to recognize that our experience of the world is one amongst many and we must learn to see ourselves from the point of view of the other”[6].

Indeed we are socialized through language, through synonymic and more pertinently antonymic patterns of language. We learn from a very young age, of what is through what it is not. We make associations through contrasts, teaching our children to construct basic families out of likeness rather than difference, such as categories of human, animals, birds, mammals, reptiles, black, white etc. While such a method has its place, dependence on such generalised contrastive models of teaching without attention to the use of qualifiers and discriminators can encourage the perception that all things exist in binary associations. Patterns of understanding then emerge via a model of contrasts that is over-dependent on meaning through its corollary *Other*. Such a view of the world is sustained by the need to hold a lens on someone else to tell us who we are. The focus then is to assume power for ourselves through a relationship with what/who we regard as our opposites.

As psychoanalysts argue, the problem with such a position is that the Other can never be reconciled to the subject. The Other must, by necessity, remain sealed in difference so that we can remain secure in our plenitude of being. Consequently, we can shirk the responsibility for order and meaning from our shoulders, so that it lies not with us, but with those whose difference must be cast as fixed and non-negotiable to convey the meanings to which we are accustomed. It means that we cannot know ourselves

except as we define ourselves through the Other. This fixation then on the Other feeds our sense of self and our fantasies of the self. If this fixation on the Other makes us feel good about ourselves, it also means that we have a scapegoat who becomes the reason for our peace and our conflict. Accordingly, Zizek argues that all conflict “is always a war of fantasies” [7].

At the most generalised global level, this fantasy finds a home in what Huntington proposes as the impending “clash of civilizations”. “What is evident from Huntington’s language is the way he uses figurative language to accentuate the distance between “our” world – normal, acceptable, familiar, logical – and, as an especially striking example, the world of Islam, with its bloody borders, bulging contours, and so on”[8]. The rhetoric of commentators regarding global conflict and terrorism further extends the trajectories of these imaginary divides, which in turn, betray the resident anxieties, fantasies of difference and *Otherness*. What do we as teachers do against this back-drop of politics and violence? How do we demythologize in our classrooms the great cultural divides of Us/Other, civilized/uncivilized that are resurrected in the political arena?

Education has generally been regarded as “universal(ly) liberalizing” in that it is the single most important medium for counteracting prejudice. Research has consistently proven that “higher educated individuals turn out to be less prejudiced against ethnic minorities than lower educated minorities” [9]. But this apparently “liberalizing effect of education”, Hello et al argues, is significantly dependent on and complicated by varying “national contexts” [10]. Influences such as the strength of “democratic traditions” and the “religious heterogeneity” of countries impact on the effectiveness of the “transmission of tolerant values through the educational system”[11]. Clearly, while the value of education in minimizing prejudice cannot be underestimated, the fact still remains that the way in which we market our stories/beliefs often advance the very prejudices and violent formations that we wish to dispel. This is particularly significant in the case of religious education and socialization. A trail of research beginning from Allport and Ross’s (1967) study to Altemeyer’s (1996) study prove that prejudice is no stranger to religiously inclined individuals[12]. Prejudice “measured by the Manitoba Ethnocentrism Scale demonstrate that religion provides no real immunity to racism and in fact consistently advances sexually-related prejudices [13]. Further, “responses to the Christian Orthodoxy scale (Fullerton & Hunsberger, 1982)” demonstrate how while “one’s creed per se” may not condone prejudice, the self-righteous attitude that “one’s beliefs are fundamentally ... inerrant” advances and complicates “bigotry”[14]. Further,

Altemeyer argues that religious conditioning encourages a container model of belonging, “Us versus Them”. The resulting “religious ethnocentrism” predisposes religious fundamentalists to “make in-group versus out-group discriminations – and create(s) a template for later discriminations against various “Thems”” [15].

3. Analysis of Findings

Given that religion is a vital human need, how do we moderate claims that religion is tied to violence. Arguably, on the macro-level, religion is fundamentally important in the vital role it plays in teaching the values of love, unity and peace. Yet, we cannot ignore the gap between “explicit” (conscious) religious attitudes and “implicit” (unconscious) religious attitudes [16]. My interest is in how “implicit” attitudes can be challenged through the classroom. One significant trajectory involving the formation of “implicit” attitudes involves the way in which sacred texts/stories are taught. If on the macro-level, religion teaches love, peace and unity, on the micro-level, nesting ironically, in many of our sacred stories is a sub-text of violence, a code of prejudice, a theological basis for sacrifice, death and murder.

In *Things Hidden since the Foundation of the World*, Girard tells us that human beings “kill and continue to kill, strange as it may seem, in order not to know they are killing [17]. The theological rationale for suicide-generated killing suppresses and reveals at the same time the need by the performers to believe that their act is a “necessity imposed from without, a divine decree [18]. Indeed, the sacred texts of almost all major religions carry in some form or other stories of sacralised, genocidal and apocalyptic violence, aimed at the destruction of the ‘unholy’. Similarly, Oliver McTernan argues that “[i]n each faith tradition one can find sufficient ambiguity in its founding texts and stories to justify killing for the glory of God[19].

Bekkenkamp and Sherwood’s *Sanctified Aggression: Legacies of Biblical and Post-Biblical Vocabularies of Violence* deal with the “links between the violence ... in biblical texts and postbiblical” violence, among other things, the “contribution of biblical paradigms” to more recently, the Rwandan genocide of 1994 and the “contemporary stereotyping” of minority groups [20]. Timothy Longman’s assessment of Rwanda is that “Christians could kill without obvious qualms of conscience, even in the church, because Christianity as they had always known it had been a religion defined by struggles for power, and ethnicity had always been at the base of those struggles”[21]. Whatever the motivations for violence, the Rwandan massacre demonstrates that people who belong to a Christ-centred faith modeled on love and peace are

not immune to staging genocidal violence. Why? The answer is that the pacifist positions preached by major religions are contradicted by significant examples of sacralised violence embedded in sacred texts. In the Christian context, the pedagogical frameworks of biblical interpretation are anchored in either glossing over the Old Testament accounts of genocidal violence or defending it as God’s prerogative. If we are committed to peace, religious leaders must address the willful denial of ritualized violence that haunts the pages of our sacred texts.

To make my point, I turn to an example of this. Embedded in our literary and religious traditions are fantasies of *Othering*. A notable example is the story of Samson in the *Book of Judges*, a story that has become more significant in the light of the terrorist activities of September 11. Traditional readings of Samson regard Samson as an indisputable hero, who despite the lawlessness of his own life, is redeemed in one stroke through his scandalous last act, his destruction of the Philistines, at the cost of his life. The thrust of the Samson narrative uncritically privileges the Israelite voice and casts the Israelite world-view against the Philistine whose constitution is cast categorically and irrefutably as the irreducible Other. Further, this “beloved-enemy” opposition is given weight through imputing the violence to God. For our purpose, the vilification of the Philistines and the sanctifying of the Israelite hero indict the text’s “sacred authority” in that its prejudice is marked by its conforming to the Us/Them model. Among other things, the text establishes a link between racial prejudice and religious prejudice which merge here in the loathing of the Other.

As teachers we should ask what the risks are of failing to deconstruct this portrait of Samson as biblical hero? In *Let my soul die with the Philistines*, Galpaz-Feller argues that the Judges story is constructed to “redirect the motive for Samson’s death from the personal realm towards the national realm” so that Samson’s suicide is “conceived as an act of heroism, sacrifice and redemption”[22]. Of particular interest is the way the Judges portrait of Samson has been re-framed in the light of September 11 and global terrorism. For example, Shadia Drury draws attention to the “uncanny resemblance between Samson’s attack on the temple of the Philistines as described in the Bible (Judges 16:26-31) and the terrorist attack on the World Trade Center in New York on 11 September 2001”. Drury argues that: “[While] Atta’s crime [is] more technically sophisticated and executed on a larger scale than Samson’s, [...] morally speaking the two crimes [are] identical. In both cases innocent victims were buried alive in the rubble – innocent people met a gruesome death that they could not have anticipated or deserved”. On this basis, Drury argues that even though “[i]t is difficult not to conclude that Samson was as much of a terrorist as Atta [...] we

regard Atta as a criminal, and the incarnation of evil, but we go along with the Bible in portraying Samson as a hero". Drury's question finally marks the quandary we find ourselves in: "[i]s there any difference between [Samson and Atta] that would justify such radically different assessments?"[23].

How should we moderate our reading of the Judges story in the light of current events? Indeed, even traditionalists agree that until his final feat at the temple of Dagon, Samson is not an ideal hero. He is for all intents and purposes abrasive, lawless, self-indulgent and reckless. Robert Alter describes him as "a hero ... whose formidable brawn will not be matched by brain, or even by a saving modicum of common sense" [24]. Accordingly, questions of Samson's "heroism" must be moderated against the claims of his "human foibles" [25]. The Philistines are treated as stock characters, the irreducible enemies of Israel and God, against whom, Israelite heroes stand as models of "faith" and witness of God's redemptive power. The dispensability of the Philistines to any larger purpose is demonstrated by the fact that the Bible writers privilege the Israelite point-of-view by limiting lyrical subjectivity to the Israelites. The Philistines are objectified through the Biblical narrative and serve as the *Other*, the enemy whom God uses to punish the Israelites, to teach them the error of their ways. The denial of humanity to the Philistines through the caricature of the villain archetype is raised powerfully in the Bible through repetition and through the language that vilifies the Philistines as "unholy" and deserving of their destruction in the temple of Dagon. Such readings carry prejudices that are still evident in the politics of the Middle-East.

To return to our critique of Othering, I cite Susan Ackerman's question "What if Judges had been written by a Philistine?" Ackerman points out that the Philistines are mentioned just five times and fairly incidentally, in the first twelve chapters of Judges and are entirely absent from the book's concluding episodes (Judges 17-21). It is only in Judges 13-16, in the "saga of Samson" that the Philistines become paramount to the Bible's purpose. The Philistines are cited as the aggressors to whom the Israelites have been given over for forty years, for their "having done evil in the sight of Yahweh" [26]. Ackerman argues that if the text had been written from the Philistine perspective, Delilah would be celebrated as hero. It becomes then a matter of perspective. The casting of Samson as hero is based on patriarchal as well as national prejudices. Yet, the story of Samson is often presented to children in the light of Samson's unbridled passion for God and faith in his election as God's champion and defender of the Israelite nation. If we searched for traces of the Samson narrative in postbiblical times, we would recognize in Milton's *Samson Agonistes* an attempt by Milton to moderate this bias

against the Philistine Other. Despite the availability of intertextual resources to modern students, the reluctance to pit sacred stories against literary revisionings suggest an underlying avoidance on the part of religious teachers in interrogating the embedded violence in sacred texts. The intertextual relationships between the two texts would help critics recognize that "cultural" and "literary" readings help contextualize problem texts and re-situate these texts so as to expose, name and shame violence. My purpose in aligning this example of the Samson story in Judges to Milton's *Samson Agonistes* is to demonstrate how, through such comparisons, the Bible story can be extricated for students from its Orientalist frame. The contrastive pedagogy here becomes useful only as it is applied as a means of qualifying biases, not as a study of binary differences but rather as a study of the construction of imagined differences, i.e. Samson's imagined superiority set against the imagined inferiority of the Philistines.

Milton's achievement can be valued against the need to expose the suppressed violence in the Biblical rendering of the story. As Derek Wood and others demonstrate, the value of Milton's text is the distance it provides us for critiquing the Judges account of sacralised violence and I sum this briefly. Milton appropriates the content of the Judges story but deviates on two very significant counts, the treatment of Delilah/Dalila and the Giant of Gath [27]. In other words, Milton gives to the Philistines the voice/s they are not allowed in the Bible. Seeking out the dialogic relationship between the two texts help expose the embedded prejudices of the sacred text. As Mary Nyquist argues, Samson's status as hero is possible only if we accept the biblical "orientalising of the Philistines" as "unclean/unholy" [28].

4. Conclusion

How do teachers deal with embedded sacralized violence in the light of the reluctance by religious fundamentalists to read biblical texts as cultural and literary constructs. As McTernan argues, "strictly literal explanation of sacred texts" are obsessed upon by "religious extremists" who regard anything to the contrary as "open to error" and "damnation"[29]. They reject the basis of biblical exegesis stemming from the late 19th century which acknowledge sacred texts as "culturally conditioned" and hence necessarily subject to "rigorous scrutiny"[30]. For these fundamentalists, the authority of the sacred texts is uncompromisingly divine, even going as far as to claim that "God dictated his message verbatim" and as such these readers/scholars remain indifferent to "inherent textual inconsistencies, contradiction and the anthropological, astronomical or historical errors found in the Scriptures"[31].

In the light of this discussion, I wish to close on two points. Firstly, a point about religious education in schools and Universities. Biblical/Religious Studies is often isolated from other disciplines. Where it is situated within Arts and Humanities Faculties, its relationship to other disciplines is treated superficially, to say the least. My point is that given the Us/Them schema that underlies religious affiliations, we would be wise to home Biblical/Religious Studies as a trans-disciplinary subject in a trans-disciplinary setting, seeking out interdisciplinary relationships, and in dialogue with literary, historical and anthropological studies. Secondly, I suggest a practical step that teachers can take to help students overcome the “avoidance hermeneutics” which uphold sacralised violence. I suggest borrowing an element from Girard’s theory of scapegoating in which Girard establishes the difference between mythological or texts of persecution (texts written from the persecutor’s point-of-view) and revelatory texts (texts written from the victim’s point-of-view) to trace a route out of conditioned violence. I suggest that we introduce what I call “revelatory” writing practice into the curriculum.

I propose the following model:

Revelatory Writing Practice Model

- a) **Mythologize:** introduce a text/s of persecution which sacralizes violence (text written from the persecutor’s perspective).
- b) **De-mythologize:** help students locate its bias.
- c) **Intertextualize:** investigate traces of the text in other narratives or texts (literary/historical/anthropological/religious) as a basis for comparative study
- d) **De-sacralize:** help students locate what Robert North calls the “built-in unawareness”(the blind spots that overlook/excuse sacralised violence)[32].
- e) **Compose Revelatory Text:** encourage students to rewrite the text from the point of view of the victim.

Complicate Revelatory Text: complicate ‘persecutor / victim’ roles. i.e. ask students to consider how persecutors can also be victims and how ‘victims’ can/do act like their oppressors.

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The Tension and Interaction between the Concave and Convex Patterns and the Coloured Elements in a Logical Composition Based on the Proportional System Derived From Islamic Ratio

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Abstract

The study was based on a research that examined the development of compositions on a proportional system that was derived from Islamic proportions. Designed compositions rely on actual convex and concave relief, in combination with coloured stripes. The work that I have studied and produced also relies on the tension between the actual concave and convex, and the coloured band. Since the latter has an almost atmospheric, they can appear almost as shadow, thereby implying depth. This consequently adds to the ambiguity and tension between that which is actual relief and that which is flat. The disposition of these elements was also based on $\sqrt{2}$ and $\sqrt{3}$. The proportion of one of the first compositions to use combinations of these elements was based on the dynamic rectangle $\sqrt{3}$, which was derived from the diagonal of a $\sqrt{2}$ rectangle. This subsequently determined two focal points, around which the elements were located within the composition, one for the concave and convex element and another for the bands of colour.

1. Introduction

Unlike Christianity, Islam rarely used pictorial representations of religious imagery. The Muslim artist forbade the imitation of human and animal forms and was instructed to confine itself to plant and abstract motifs. It was for this reason that Islamic artists used the imagery of mathematics to discover the principal structures that are reflected in matter. Islamic art is essentially a way of ennobling matter by means of geometric patterns, there were contextualised through calligraphy [2].

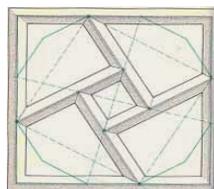


Figure 1. The basis of the square in square in Islamic design

The key to the construction of the complex geometric design is through a grammar of mathematical principles and the constraints of symmetry and laws of proportion (see Figure 1). The basic component for Islamic design is a simple square or a triangle derived from the square. Most design known as the “repeat”, rational system of growth generation [3]. As the square plays central role in Islamic design, the square was selected for the practical work in the studio investigation of this research. In the final stage of the studio investigation a series of relief curved elements were also designed based on the proportion of Islamic ratio. The ratio of the elements within these works were based on the relationship between one element to the others and the surrounding space. For instance, a relationship between a positive element to negative space based on a specific ratio or comparing one element which is half of another double the former (see Figure 2).

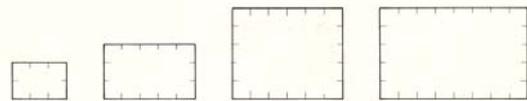


Figure 2. Grammar of mathematical principles

In Islamic design the ratio is expressed as (a: b) or represented as a fraction (a / b), where \underline{a} and \underline{b} could be any number. Proportion is the equality of two or more ratios which can be either:

For continues: $a / b = b / c = c / d$ etc., $2/4 = 4/8 = 8/16$ etc.

For discontinues: $a / b = c / d = f / g$ etc., $2/4 = 3/6 = 5/10$ etc.

Both have a constant characteristic ratio, in this case represented numerically as $1/2$.

The rectangle is also commonly used in Islamic design. Its characteristic ratio is expressed by the measure of its short side (a) to its long side (b); a: b could be any ratio, 2:3, 3:5, 5:6, 5:8 :

In a square, (a) and (b) are equal, and therefore the proportion is $a/b = 1/1 = 1$. When constructing a rectangle the short side (a) of a square and the long side (b) is equal to the diagonal of that square, the ratio a:b is equal to $1:\sqrt{2} = 1.4142$ (see Figure 3).

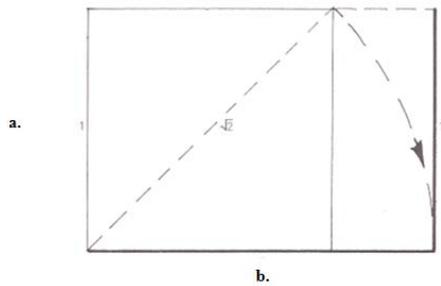


Figure 3. Constricting a Dynamic rectangle

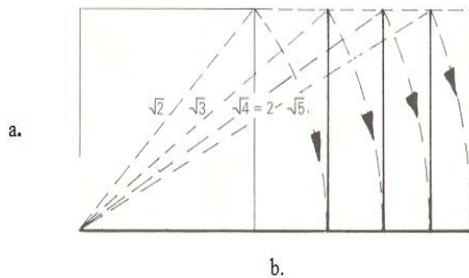


Figure 4. Construction of dynamic rectangles, 1.414, 1.732, 2 and 2.236

Rectangles with the ratio of their two sides a: b equal to $1 : \sqrt{2}$, $1: \sqrt{3}$, $1: \sqrt{5}$, etc, called “irrational number” or the dynamic rectangles, the construction of which is illustrated in Figure 4. As the symmetric patterns are the most commonly used pattern in Islamic design, some practical work in the studio investigation was designed based on repetition of an element or symmetry. “Symmetria” in classical terminology meant the proportionality between the constituent elements of the whole. Since the concept of “Symmetria” are based on harmonic proportions, the linear numerical methods of analysis of geometrically constructed designs invariably result in approximations or inaccuracies because of the

irrational numbers derived from the proportions of the geometric elements of the design.

2. Designing coloured strips and relief elements

Strong relationship among the elements in an Islamic structure formed a basis for the compositions in this study. As in Islamic design, the square has a strong structural role and is capable of a variety of permutations, was chosen for most structures. The colours were also selected from the most frequently used colours of the Persian palette. Persian Turban was one of the most used colours, which mixed with Prussian blue produced a gradient of the desired colour with a shadow like quality. Tones of grey were added to the composition. The combination of colour and relief began with the design on a square based on the proportion of $1: \sqrt{2}$ and $\sqrt{3}$. Rough cartridge paper 220g was also chosen because the examination in the studio research showed that it was the most appropriate for relief patterns. The size of these works was 70cm x 70cm because this was just large enough for the basic proportions to be visually apparent. Each square was divided into 35 sections each 2cm. For the first composition, two elements were used; a curved (half-round) relief of 4cm width and a slim band of 2cm width. The printing colour was 1part Persian Turban, mixed with 2 parts of chalk white, and for a gradient of darker colour, 2 shades of grey were added to the mix. The composition was based on the proportion of $1: \sqrt{3}=1.7320$, as shown in the Figures 5 and 6.

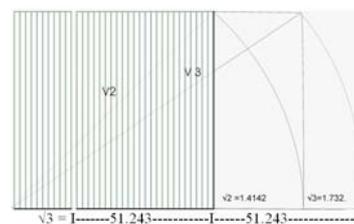


Figure 5. Drawing a $\sqrt{3}$ rectangle derived from double diagonal of the square

The first proportion was based on
 $\sqrt{3} = 1.7320 \times 70 = 121.243$,
 $121.243 - 70 = 51.24$.
 $70 - 51.24 = 18.78$

Therefore, from the right hand side of the work, at a distance of 51.24cm, a vertical strip of grey was

printed. The width of this stripe was 2 cm, which covered one linear section in the main composition.

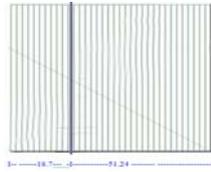


Figure 6. The location of the strip based on $\sqrt{3}$



Figure 7. Concave relief element

A concave relief element was introduced to the composition to balance it; the location of this was based on the golden section $\sqrt{3}$ as was the location of the grey band repeated again from the left hand side (see Figure 7). The relief element was therefore the same distance from the edge as the vertical band, except its width was double.



Figure 8. An equal proportion of $\sqrt{3}$ from both side of the square

In this composition, the left hand side of the work seemed heavier because of the lighter colour of the relief; therefore, a greyer shade was added to the colour on the right (see Figure 8).

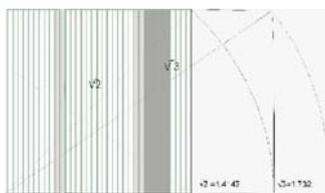


Figure 9. The location of the heated section compared with opposite strip.

In order to show the effect of heat on colour in this type of composition, it was repeated without applying a relief element. The intention was to examine the shadowy quality of the colour. The composition was divided into 3 sections by 2 narrow vertical bands using proportion of $\sqrt{3}$. The first band was white (original colour of paper) and the second incorporated the heated colour. The third part was also divided into 2 sections; the section which was close to the white band was heated and changed to a darker shade in order to balance the composition (see Figure 9).

The composition of Figure 10 was based on the proportion of $\sqrt{3}$.

$$\begin{aligned} \sqrt{3} &= 1.7320 \\ 1.7320 \times 70 &= 121.243 \\ 121.243 - 70 &= 51.24, \\ 70 - 51.24 &= 18.76, \\ 18.76 \times 1/2 &= 9.38. \end{aligned}$$

The focal point was 18.76cm(A) from the right hand side and extended for $1/2$ of this space, 9.38cm (B). Textures of this space were produced through heating printed colour (the process described in project 3), to highlight the focal point of the composition.

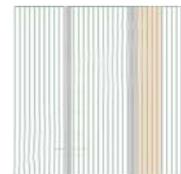


Figure 10. The concentration focused on the $2/7$ of the composition based on the proportion of $\sqrt{3}$

In the next print, the same process of proportion was repeated and a convex relief replaced the band of colour. In this work the vertical strip was also represented as negative, both sides being heated to enhance this quality (see Figure 12). The process of heating colour was extended in this work. The relief element and the band of colour were both located according to proportion of $\sqrt{3}$, as shown in the diagram.

$$\begin{aligned} \sqrt{3} &= 1.7320 \times 70 = 121.243, \\ 121.243 - 70 &= 51.24, \\ 70a - 51.24 &= 18.76 \times 1/2 = 9.38. \end{aligned}$$

Both elements in this work were placed 9.38 cm from either side.

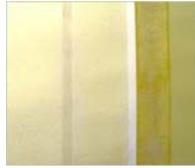


Figure 11. Tactile texture highlighted the focus point of the composition. The composition was based on the proportion of $\sqrt{3}$. 70cm x 70cm



Figure 12. The combination of heated negative line, relief and tactile texture based on the proportion of $\sqrt{3}$. 70cm x 70cm

$$\begin{aligned} \sqrt{2} &= 1.414, 70 \times 1.414 = 98.99 \\ 98,99 - 70 &= 18,99, 70 : 2 = 35, \\ 35 - 18.99 &= 16.1 \end{aligned}$$

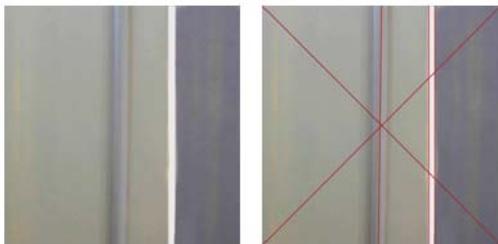


Figure 13. Concentration pointed to the middle of combined with the proportion of $\sqrt{2}$. 70cm x 70cm

The composition was designed with one convex relief and one white stripe on the surface, the latter with a gradation of purple. The focal point was detail around the middle of the composition, and was complemented by a secondary element as shown in the diagram (see Figures 11 and 13).

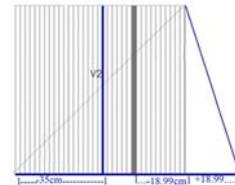
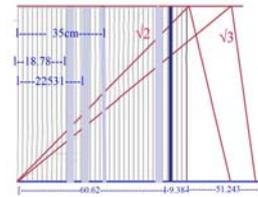


Figure 14. A complex composition the composition and based on the proportion of $\sqrt{2}$ and $\sqrt{3}$.

The compositions were expanded through the proportion of $\sqrt{2}$ and $\sqrt{3}$. Three convex relief elements, comprising a negative and a positive band were applied in gradations of purple (see Figure 14).

$$\begin{aligned} \sqrt{3} &= 1.7320 \\ 1.7320 \times 70 &= 121.243 \\ 121.243 - 70 &= 51.24, \\ 70 - 51.24 &= 18.76, \end{aligned}$$

$$18.76 \times 1/2 = 9.38.$$

$$\begin{aligned} \sqrt{2} &= 1.414, \\ 70 \times 1.414 &= 98.99, \\ 98,99 - 70 &= 18,99, \\ 70 : 2 &= 35, \\ 35 - 18.99 &= 16.1. \end{aligned}$$

3. Conclusion

The most important achievement of this study was the exploration of relief techniques and the use of concave and convex element in combination with stripe colour bands based on rational systems that

succeed in attaining images through accentuated relief. This study also enabled the researcher to develop high relief image and to design an increased pronouncement of convexity and concavity in paper during the studio experiment by using heat and releasing the paper's fibres while pressing. Approaching these techniques and the study of previous attempts also facilitated this research to discover and resolve remaining problems of embossing in combination with heat.

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Session 7A: ICT Education, E-Learning and Distance Education co-located

An E-mail Processing System Using Text-Mining Techniques (Awatef Aloui, Mahmoud Neji)

Assessment of the Nature of Teaching/Learning: Relationships within Virtual Classrooms (Lynne Anderson, John Cartafalsa)

C-Thinking via E-learning: A Conceptual Paper about the Use of Digital Learning Tools for Reflective Thinking (Ayse Kok)

Effects of bringing computer aided technologies in physics and mathematics into the classroom (Morten Brekke)

A Case Study of ICT Projects in Education: Project Management Outsourcing (Aristides Vagelatos, Haralampos Tsaknakis, Fragiskos Foskolos, Theodoros Komninos)

An E-mail Processing System Using Text-Mining Techniques

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Abstract

With the fast development of Information Technologies and Communication, the electronic mail has evolved as a convenient medium of communication and interactivity. In E-learning domain, tutors spend much of time to treat a large amount of e-mails. The focus of this paper is to propose a system able to relieve the burden of e-mails processing. For this purpose, an application of text-mining and ontological techniques will be useful to analyze and classify e-mails, fetch and send answers automatically to learners.

1. Introduction

In recent years, E-learning is a newly growing field that helps learners to learn without time and distance barriers. The distance teaching is based on the use of interactive technologies between learners and tutors.

With the ever-increasing use of the Internet, E-Mail has proven to be one of the main communication means between learners and tutors. But the exponential increase in the volume of e-mails can make the treatment of e-mail tedious and time consuming especially for tutors. Therefore, the answer will be sent in few days, perhaps in few weeks and even no answers sent. This late or absence of answer has led to a serious problem, because they put in peril one of the foremost objectives of E-learning, which is the development of the relations of collaboration and interactivity.

To solve this problem, automatic treatment e-mails is very important in improving the tutor-learner interaction. For this purpose, this paper proposes an application of text-mining and ontological techniques which analyze and respond automatically e-mails.

The remainder of the paper is organized as follows: section 2 provides a detailed literature survey of the related techniques of text-mining. Then, we provide an overview of our proposed methodology to analyse and answer e-mails in section 3. Finally, section 4 draws some conclusions and ideas for further research.

2. Related work

The search for relevant information was very important. Previously, the primarily difficulty consisted in having access to information. With the evolution and the technological development of data processing, mainly the speed and the reduction of the costs of storage and treatment, a new field of research emerged, called Knowledge Discovery in Database where data-mining represents the essential and significant step that seeks to extract high level of knowledge from the low level of data.

The problem today, due to increasing use of the modern and unstructured forms of communication, is to filter among the profusion of information available those really exploitable. So, content analysis has matured into text-mining, literally excavation of textual data, which was created in the middle of 80 by the professor Don Swanson.

This section shows the main works in the literature that concern text-mining process in a general context of automatic processing of unstructured textual data, but that also provides several works which has focused on the automatic treatment of electronic means of communication, especially e-mails.

2.1. Text-mining process

Text-mining can be defined as a new prospect for the analysis and the automatic treatment for textual database allowing the discovery of knowledge [1]. Its characteristic lies in the specific steps of preparation of the data due to the semi-structured or unstructured nature of the text documents being processed. Basically, two different stages are determined for this process. The first one is the pre-processing that converts a textual data into a structured form, and treats documents as bags of words using a linguistic [2] and semantic analysis [3].

The second stage in text-mining process is the text classification or text clustering. Text classification, namely text categorization, dates back to 1960s, but it became a major subfield in the early 1990s. It is defined as assigning predefined

categories to text documents. [4] However, text clustering is known as an important and automatic technique for unsupervised document organization into clusters (i.e. the documents sharing the same topic are grouped together), and fast information retrieval or filtering. [5]

The text clustering is different from text classification because there is no training stage by using labelled documents, and the number of clusters is unknown prior to the clustering.

There are various methods of classification that can be categorized into statistical and machine learning method.

Numerous statistical methods have been introduced, such as Hidden Markov models [6], regression models [7], discriminant analysis [8], etc.

Machine learning methods represent a general inductive process automatically builds a classifier by learning, from a set of pre-classified documents, the characteristics of the categories [9]. A wide range of learning methods has been applied to this purpose, such as k-Nearest Neighbor [10], Naive Bayes [11], Support Vector Machines [12], Decision Trees [13], Voting [3], neural networks [14], centroid classifier [9], etc.

2.2. E-mail mining

Electronic mail can be viewed as a special type of document as it is primarily text along with some identifying information unique to it (e.g., from, to, subject, cc, attachments and so on). [15] In the past few years, with the advent of text-mining, the examination of e-mail started to get an increased attention of a growing number of researchers.

As already mentioned in the onset of this section, there has been a vast literature on text-mining. Furthermore, there has been many works on classification and clustering e-mails that have been applied to e-mail mining in order to reduce information overload.

In the aim to scout what had been done previously by others, existing research to automatically classify incoming e-mails can be broadly categorized into: rule based classification [16]; Information Retrieval [17]; machine learning method such as Decision Trees learning [18], Support Vector Machines [19], Naïve Bayes [20]; graphic classification [21]; ontology classification e-mails [22].

The original motivation of this work is based on the fact that, although various techniques have been effectively applied to e-mail categorization, it still confronted some challenging issues. The most significant issues are the high costs of classification errors due to the unformed content of e-mails; earlier works was focused especially for the commercial field and they prevent on the level of e-mails classification and filtering; and a few researches establish semi automatic answers which require a

human intervention for the choice of the recommended reply template or the checking.

For example, Weng & al. [23] classifies customer e-mails using multiple concepts, suggests relevant reply templates to quickly and accurately answer customer e-mails, and then customer service staff still has to choice and send the correct reply template to the customer. Besides, the process of sending the reply email still manual.

To address those issues, this study aims to apply text-mining and ontological techniques in order to decrease the number of e-mails treated by human tutors and accelerate the process of reply e-mails.

3. Proposed systems

Within a virtual learning environment, the proposed system aims to improve e-learning by means of integrating an e-mail processing system based on intelligent agents. The overall flow of the e-mail processing architecture is shown in Fig.1.

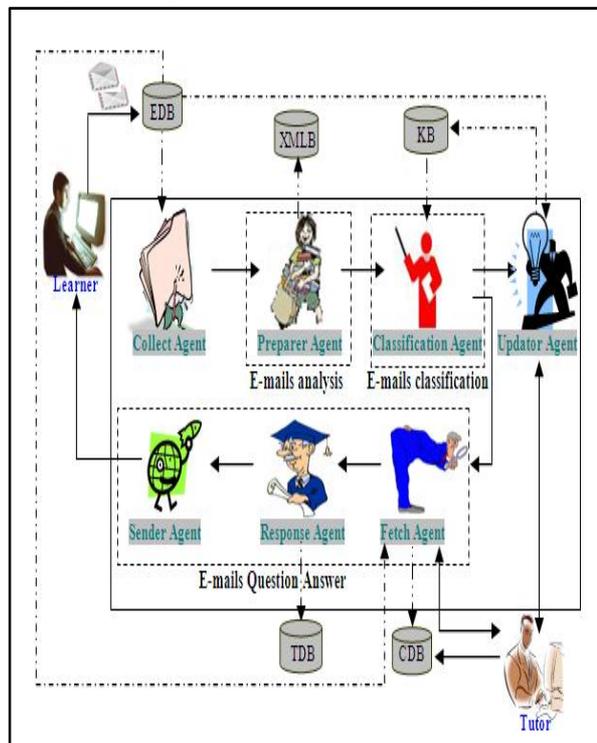


Figure 1. Architecture of the e-mail processing system.

Legend :
EDB : E-mails Data Base.
XMLB : XML Base.
KB : Knowledge Base.
TDB: Template Data Base.
CDB : Courses Data Base.

As they mentioned in Fig.1, three major layers are outlined. A brief description of each processing layer is given below.

3.1. E-mails analysis

The first step in the e-mail processing is to carry out an analysis of the learner's e-mails. The purpose of this step is to get a proper representation that will be used to cluster emails accordingly to their semantics. For that, we propose to use the text-mining techniques as a strategy for parsing learner's e-mails. Within a Multi-Agents System (MAS), the structure of e-mails analysis is depicted in Fig.2.

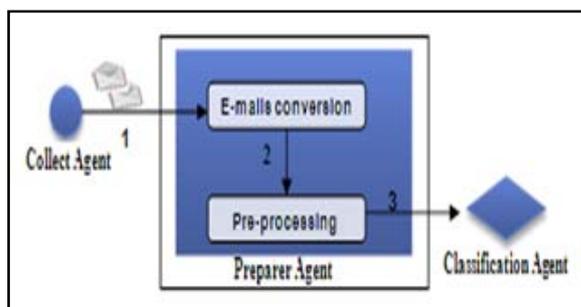


Figure 2. E-mails analysis.

The e-mails analysis structure uses a software agent called "Preparer Agent" that receive (1) e-mails from the "Collect Agent" and transfer (3) the result of her process to the "Classification Agent".

As its name indicates, the "Collect Agent" makes only the collection and the transmission of e-mails without any treatment to the "Preparer Agent". This last one made up a first treatment (2) of the received e-mails in order to facilitate the step of classification and extraction of information. This pretreatment consists on two tasks:

3.1.1. E-mails conversion. E-mails are unformatted by nature. So, the "Preparer Agent" converts e-mails into structured representations. In this study, we choose to represent the e-mail's HTML format in a XML file that contains mainly two parts: <Header> and <Body>. In this task, the "Preparer Agent" focus only on the <Header> part that will be parsed and tokenized through the text-mining techniques to get information about: Sender (From), Recipient (To, CC, Bcc) and Subject. Attachments are considered part of the body and are processed in future work.

3.1.2. E-mails pre-processing. The body part of each e-mail is parsed now using the text-mining process, as shown in Figure 3, in order to extract the relevant e-mail body features. For that, the "Preparer Agent" apply first the linguistic parsing, that consists to tokenize the <Body> part of the XML file into words. A standard stop-word list is used to remove stop words, such as whitespace or special characters. Then, remaining words are replaced by

their lemmas, and stemmed to their root in order to facilitate the next parsing.

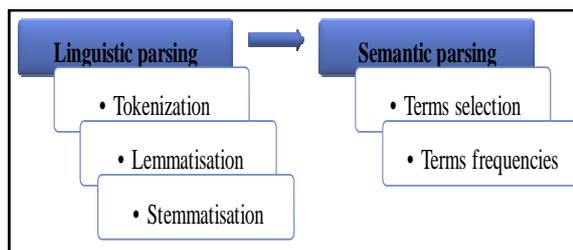


Figure 3. E-mails pre-processing.

Second, in order to extract key words that identify correctly the e-mail, a semantic parsing is applied to choose the most important words of e-mails and reduce dimensionality. For that, the "Preparer Agent" calculates the frequency of each term in the e-mail using the method of frequency attribute TFIDF [3], and then picks only terms having the high frequency weight. Finally, each e-mail is then represented by a vector that contains a normalized weighting for every selected term.

3.2. E-mails classification

E-mail classification process can be stated as follows. Given a training set of labeled e-mail $E_{train} = \{(e_1, c_1) (e_2, c_2) \dots (e_n, c_n)\}$, where e_i is an e-mail from an e-mail set E and c_i is the label chosen from a predefined set of categories C . This process attempt to infer a classifier that can correctly classify a test set e-mails E_{test} . So, we must first determine the set of category, and then automatically classify e-mails into the appropriate one. For that, an approach oriented software agents for a semantic classification that links e-mails to ontological concepts is proposed. Fig.4 summarizes the e-mail classification process used in predicting the category of e-mails.

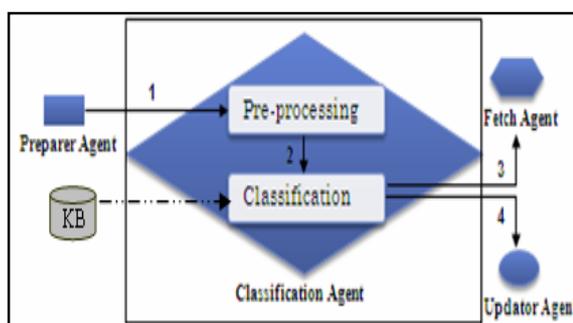


Figure 4. E-mails classification.

The framework of this second stage consists on two tasks: pre-processing and classification.

3.2.1. Pre-processing. In order to identify the various significances and functions of communication via e-mails between learners and their tutors, we decided to invest a similar study of

Thao Lê & al. [24] which 1478 learner's e-mails was analyzed. This study acknowledges that topic's e-mails were divided into 10 categories, which can be grouped in three principal clusters sorted according to an order of prevalence: procedural, social and cognitive. Table 1 shows the 10 most frequent function's questions which are ranked in the following enumeration:

Table 1. E-mails clusters.

Procedural function	Social function	Cognitive function
Request.	Thank.	Discussion.
Confirmation.	Reference.	
Clarification.	Complimenting.	
Complain.	Salutation.	
	Share.	

So, basing on these functions, we develop taxonomy of e-learning e-mail's questions. The drawback in the study of Thao Lê & al. [24] is it doesn't treat e-mails which comprise more than one function. In this paper, we use category priority to solve this kind of classification problem.

3.2.2. Classification process. Using the Knowledge Base (KB) made of rules of production describing ontology associated with learner's e-mails, the "Classification Agent" classifies e-mails according to a semantic aspect. The result of this process will be transmit (3) to "Fetch Agent". When no concept is found, the "Classification Agent" sends (4) this e-mail to the "Updater Agent". This last one adds an anonymous category to the KB to indicate that a new category is appeared. Then, it sends the original e-mail to the tutor to be treated. After receiving a special file from the tutor, "Updater Agent" modifies the label's category in order to be used in classification process.

3.3. E-mails Question Answer

The e-mail Question Answering (QA) process represents the task of extracting the right answer from a large collection of documents where the answer to a natural language question's e-mail lies. In this study, we develop an e-learning QA system able to answer e-mail's questions according to the e-learning questions taxonomy. This system focuses only procedural and social e-mail's clusters. Thus, the main components of our QA e-mail system could be summarized in the following steps: question analysis, fetch answer, formulate answer and send e-mail. Fig.5 graphically shows the execution sequence

of these components which are related to each other and executed by specific agents.

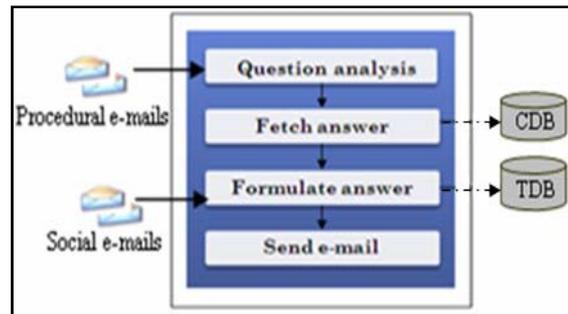


Figure 5. E-learning question answer e-mails architecture.

3.3.1. Question analysis. The correct analysis of the procedural e-mail's question is so critical since the information produced by this process will infer the fidelity of all remaining components, and consequently the final result of the whole system. Therefore, a specific agent called "Analysis Agent" ascertains what type of question is being asked, and comprehends its means. This interpretation is then transmitted to the fetch agent to exploit it in the next step.

3.3.2. Fetch answer. The answer of the e-mail's question is fetch, by a "Fetch Agent", in our Data Base using the e-learning ontology. To do it, two steps are necessary:

- Documents retrieval: The obtained information from the question analysis process is used by this step to perform a selection of relevant documents from our DB.
- Relevant passages selection: with the purpose of identifying and picking out relevant text passages that are susceptible of containing the search answer, the search agent perform an ontological analysis of the relevant documents set. The selected fragments of documents will be sending automatically to the "Response Agent".

3.3.3. Formulate answer. The set of alternative text fragments obtained from the previous process are processed by a "Response Agent" with the purpose of choosing the search answer. Then, this agent chooses an appropriate response template from a several standard templates, on which it can apply to formulate the final answer which it must mail to the e-mail sender.

3.3.4. Send e-mail. Finally, the answer of the question's e-mail will be sending by a "Sender Agent" to the learner.

4. Conclusion

E-Mail has proven to be one of the main communication means between learners and tutors within a virtual campus. It is due to its simplicity of use, popularity, and speed of delivery. But the exponential increase in the volume of e-mail can make the treatment of e-mail tedious and time consuming especially for tutors. Consequently, learners receive response of their e-mails after many days and perhaps no answers will be sending. In order to assist the learners in learning effectively, it is necessary to provide an appropriate learning environment.

This work represents an attempt to describe the architecture of an e-mail processing system using text-mining techniques and ontology in e-learning framework in order to decrease the number of e-mails treated by human tutors and accelerate the process of e-mails reply. This system incorporates several dimensions such as: e-mail analysis, e-mail classification and e-mail QA. Our future work is to generalize this system to other languages such as English and Arabic. Also, we will implement an intelligent tutorial system in order to remove human tutor by a virtual one.

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Assessment of the Nature of Teaching/Learning Relationships within Virtual Classrooms

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Abstract

The authors studied factors that impact relationships in face-to-face teaching/learning settings. Their study examined relationships of students with instructor, instructor with students, and students with students. Four hundred students and twenty-four faculty members from the Schools of Arts and Science, Business, and Education, at both graduate and undergraduate levels, participated in the study. Relationships in the authors' studies were more specifically described as the nature of student-to-student interactions, the nature of student-to-instructor interactions, and the nature of instructor-to-student interactions. If the nature of relationships plays an important role in on campus teaching/learning settings, then, do online teaching/learning settings hold a similar relational value? The nature of teaching/learning relationships in the on campus (face-to-face,) study has been replicated by the authors in the online teaching/learning setting. As the online study is finalized and findings in the face-to-face teaching/learning setting are compared, implications for teaching will be clarified.

1. Introduction

In the twenty-first century, online teaching/learning is capturing the imagination and the market of students on all levels of learning all around the world. Studies that compare face-to-face teaching/learning settings to the virtual classroom have tended to focus upon student satisfaction or performance measures. Differences within the two settings while obvious have not been linked to performance measures. The authors hypothesize that performance measures can be linked to teaching/learning interaction and the differences therein the face-to-face and virtual settings. Having completed a study of face-to-face teaching/learning relationships, the authors replicated their study in virtual classrooms within their university of employment.

2. Body of Knowledge

The authors studied factors that impact relationships in face-to-face teaching/learning settings [1], [2]. Their study examined relationships of students with instructor, instructor with students, and students with students. Through qualitative analysis of narratives of what students and faculty wanted from their teaching/learning experience, three themes describing those desired relationships emerged. Four hundred

students and twenty-four faculty members from the Schools of Arts and Science, Business, and Education, at both graduate and undergraduate levels, participated in the study [2].

Theme One: *Teaching/Learning Environment* illustrated needs for open, non-threatening, enjoyable and respectful attitudes in student-faculty relationships.

Theme Two: *Exchange of Information* illustrated students' desires to learn from the instructor and from one another, and to interact with one another, not with the instructor.

Theme Three: *Mentor/Peer Association* illustrated a desire for developing networks among students to help with coursework, job-seeking, and become friends; whereas, faculty desired principles of effective teaching to help students learn.

In the twenty-first century, online teaching/learning is capturing the imagination and the market of students on all levels of learning all around the world. Biehler and Snowman, [3] reported learning results of Bandura from interactions among three factors: personal characteristics, behavioral patterns, and social environment, such as, interactions with others. Furthermore, Bandura went on to posit that the three factors influence one another. The authors' initial study took one of the factors of social environment, as described by Bandura, as interactions with others, implying its importance in any teaching/learning environment [3]. Bandura used interactions; the authors use relationships in the teaching/learning community. Relationships in the authors' studies were more specifically described as the nature of student-to-student interactions, the nature of student-to-instructor interactions, and the nature of instructor-to-student interactions. If the nature of relationships plays an important role in on campus teaching/learning settings, then, do online teaching/learning settings hold a similar relational value?

The nature of teaching/learning relationships in the on campus (face-to-face) study has been replicated by the authors in the online teaching/learning setting. As the online study is finalized and findings in the face-to-face teaching/learning setting are compared, implications for teaching will be clarified.

The authors propose to share their comparison of the nature of teaching/learning relationships in online to on campus settings.

3. Conclusion

Sharp contrasts could be drawn between student to student, student to instructor, and instructor to student in the studies conducted comparing teaching/learning interaction in face-to-face and virtual settings. The authors propose to share their findings and reveal those sharp contrasts with conference participants.

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C-Thinking via E-learning: A Conceptual Paper about the Use of Digital Learning Tools for Reflective Thinking

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Abstract

Learning in a world where traditional assessment of intelligence are radically changing and abundant knowledge is more readily available because of the proliferation of information communication technologies (ICTs) has become a challenge. Without focusing on how the technologies may provide the learners with critical thinking and analytical skills rather than the mere delivery of information may result in the mirroring of traditional didactic approaches on the technology. Especially, within the realm of social sciences where there is a gamut of information resources, developing discipline based critical and analytical thinking skills is essential to cope with the information overload. The goal of this paper is to provide a clear link between the use of new technologies in social sciences and the development of critical thinking skills.

1. Introduction

Critical thinking can basically be considered as being able to distinguish the true from the false. Despite being central to both intellectual and social progress, critical thinking is in short supply [19]. Bogdan [1] defines critical thinking as “a unique kind of purposeful thinking in which the thinker systematically and habitually imposes criteria and standards upon the thinking...”. According to Dewey [4], reflective thought should be ‘active, persistent’, and should entail ‘careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends.’ Similarly, critical thinking should include the evaluation of the worth, accuracy, or authenticity of various propositions, leading to a supportable decision or direction for action.

As it has been stated in the 1980 California State University Executive Order which announced for the first time the requirement of formal instruction in critical thinking [5], critical thinking emphasizes mental attitudes of “analyzing, criticizing and advocating ideas and reasoning inductively and deductively and reaching factual or judgemental conclusions based on sound inferences

drawn from unambiguous statements of knowledge”. Similarly, Paul, Elder, Bartell [15]; Perry [16] and Lampert [11] define critical thinking as recognizing differing viewpoints, being analytically reflective and willing to increase sources of information as well as generating meaningful questions to formulate plausible conclusions [4]. These traditional definitions of critical thinking are based on an internalist point of view that packs everything relevant to the evaluation of an intellectual product into the consciousness of an individual [3]. Accordingly, critical thinkers maintain conscious and deliberate access to the reasons for their beliefs and actions. On the other hand, the externalist point of view favors strategies related to intuitive and recognitional processes which may be more reliable for achieving goal in familiar situations or when time is limited [3]. This view focuses on the reliability of different types of processes for generating beliefs under different circumstances.

Freire [7] asserts that critical thinking can occur through the reciprocal process of connection, questioning and interaction among teachers and learners rather than depositing knowledge in the heads of students. So, a critical thinker should be able to differentiate between fact and opinion, examine the assumptions, be flexible and open-minded be aware of fallacious arguments and stay focused on the big picture. According to Meyers [12], critical thinking is a learnable skill and students can collaborate to enhance their thinking. Meyers [12] also asserts that while courses should be assignment centered rather than text oriented goals should emphasize the use of content rather than simply its acquisition.

2. Critical Thinking within the Realm of Social Sciences

According to Meyers [12], instead of teaching critical thinking as an independent subject where the students are taught to master formal paradigms of reasoning, critical thinking should be incorporated wholly into the study of individual disciplines. Treating the courses in formal reasoning as being indispensable for a study of the arts and sciences similar to a medieval curricular practice may not provide by themselves the

students with the wide range of specific critical skills appropriate to the study of the social sciences [12]. Rather, in order to teach critical thinking skills, “discipline-related frameworks for critical thinking” which can be defined as the distinctive conceptual structures and methodological norms that guide inquiry and shape theory in a given discipline should be transmitted [12]. As there is no unified critical methodology or a single procedure for teaching critical thinking skills in social sciences Meyers [12] suggests that based on the related intellectual culture and context a “step-wise approach” to the development of analytical skills can be followed. To exemplify, a series of short, carefully targeted and complex writing assignments may be given throughout the semester.

2.1 Utilizing E-Learning

Idea generation can be fostered through the bulletin boards in online learning environments by coaching the discussions to take the students' ideas to the next level and more intellectual learning whereas the presentation tools can be used for group projects. This kind of collaborative learning in pairs or groups with shared goals may promote critical thinking of the social science students. Yet, as not all of the students may possess critical thinking skills to advance an online discussion or all the faculty members may have the required expertise in monitoring the online discussions and creating productive communities of online learning support and training may be required. As Sugar and Bonk [18] stated peer collaboration and interaction may not necessarily trigger reflection on one's ideas.

Table 1. Principle Based Strategies for Teaching

Principles of Teaching	Examples of Technologies
Active and purposeful engagement with abstracted phenomena	Simulations, microworlds, virtual worlds
Multiplicity of perspectives to be fully apprehended	Multidisciplinary online resources such as wikis, blogs, open educational resources, podcasts
Relatedness for meaningful understanding	Chatrooms, forums, podcasts, online discussions about case studies, concept maps
Diversity of instructional methods	Inquiry based online discussion forums, wikis that encourage collaborative online writing activities

Reflective and substantive exchanges between social science students can occur if the faculty members can stimulate the discussions by asking probing questions, encouraging participation, holding them responsible for their thinking and coaching the students about collaborative learning. The asynchronous conversations allow for greater reflection via giving feedback students should also be made aware of the significance of their answers and learn to respect each others' ideas and construct their own understanding. A sample of similar technologies that may influence the depth of thinking of the students are shown in Table 1 [8].

Furthermore, small group discussions about a particular reading, case discussions using simulated complex problems for analysis, debating teams or mock trials where students assume various roles may be utilized. To exemplify, as van Gelder [19] suggests, after reading a particular case study, students may hold online discussions by taking over different perspectives with regard to the roles available in the case study. These online collaborative formats aiming at students' reflection, debate and interaction can effectively make the students go beyond being merely exposed to content and critically interact with it if the faculty members practice modelling reflective conversations, coaching, questioning and task structuring.

In order for the Internet to be used more than as a platform for the course content and as a communication medium for online-discussions, Kanuka [8] suggests that the following learning principles and strategies (Table 2) be applied to facilitate higher levels of learning [8].

Table 2. Principle Based Strategies for Learning

Principles of Learning	Examples of Technologies
Assume greater responsibility	Online collaborative projects, presentations, use of blogs or wikis for reflective writing, e-portfolios
Meaning making into abstracted phenomena	Scaffolded online discussion, webinars, online debates
Reconstruction of meanings	Synchronous computer mediated discussions, online role playing, online brainstorming sessions

2.1.1 Engagement with complex abstracted phenomena

Active and purposeful engagement can better occur if the following technologies are utilized:

- Simulations: Problems that are ambiguous and don't present one right solution to the learner can best be presented via simulations.
- Microworlds: Collaborative learning strategies that are necessary for the intellectual participation between the learners and instructors can best be embedded within microworlds.
- Virtual worlds: The use of online worlds such as SecondLife count as alternative teaching methods for engaging learners in problem-solving.

2.1.2 Multiplicity of perspectives

In order to present diverse perspectives about problems the following technologies can be used:

- Podcasts: Making use of several disciplines via podcasts is crucial for critical thinking.
- Blogs/wikis: Two or more occurrences that are contradictory can in-depth be discussed via blogs and wikis.
- Open educational resources: Information sets with diverse perspectives on an issue can be provided via various open educational resources provided by major universities such as MIT or Berkeley.

2.1.3 Relatedness

Phenomena that has relevance to learners must be involved, the following technologies can support this:

- Chats/forums/online discussions: Teachers as a credible authority in the field can create an intellectually stimulating environment by asking open-ended questions via threaded discussions.
- Podcasts: Phenomena that are related to an actual event can best be conveyed through podcasts.
- Concept maps: To ensure that meaningful understanding occurred concept maps about a particular subject can be created.

2.1.4 Diverse ways of knowing

This principle can further be supported by the use of the following technologies:

- Wikis: Position, conclusion, passing of judgement on an issue after evaluating the

alternatives and assessing the consequences can be practiced in wikis.

- Chats/forums/online discussions: Explaining, deciphering and resolving an ambiguous problem can be facilitated via use of threaded discussions.

Within the light of this information, in order to convey critical thinking skills, the instructors must focus on teaching the process of information discovery within the learner's own contextual meaning. This may be realised when the learners themselves select their own path of inquiry, get introduced to the necessary new technologies such as Web 2.0 based online collaboration tools when required and interact in the online setting in such a way that requires a high level cognitive involvement in order to self-construct their knowledge. To exemplify, student in a social science course could collaboratively author a paper similar to the process undertaken by professional researchers to publish their research in a peer-reviewed form. Students can choose an existing topic or propose a new topic for addition to the site. Before their work is being peer-reviewed and published each group may be given a private wiki page for drafting their outline and taking notes. After the initial draft they can use the wiki as a collaborative writing space whereas the teacher can check their notes to ensure that they are on the right track. The peer-review group can post comments on the wiki page so that these can also be incorporated into the original work before the publication. In this way, the students may feel motivated to publish a high quality product and the teacher can assess their work and provide guidance throughout the whole publication process. By sharing ideas online and getting feedback, the social science classrooms can become a meeting place for the generation of new ideas.

Using wikis in social sciences will not only make the knowledge construction process much more transparent, but also provides the establishment of a learning community. Bransford, Brown & Cocking [2] state that direct cognitive and socio-collaborative support for the group members' efforts may be provided through a community of practice whereas the learners distribute their intellectual activity so that the burden of managing the whole process does not fall to any one individual.

As van Gelder [19] state a co-learning approach to hypertext expands critical thinking to involve the examination of various viewpoints and assumptions. By following paths throughout the hypertext web, students can keep track of their thinking processes reflectively and add new associative paths into the collaborative spaces by merely clicking the mouse. Similarly, it is asserted that by creating hypertext links students' learning

experiences may become messy which is in fact indicative of the complicate process of meaningful learning [14]. Complex, multilinear and intertextual learning dispositions provide not only the opportunity for finding and making connections and reflecting upon the validity of these connections but also make the students discover that learning is in a constant state of change and growth rather than static [19]. Furthermore, with regard to online learning, the learning environments must possess an appropriate instructional design to support the students in developing their point of view and being critical. Yet, online education has often become an industrialized process of teaching and learning where students are not encouraged to apply knowledge in a variety of ways. A shift from the Fordist approach of learning that views learning as standardized and bureaucratic processes to a Post-Fordist approach where learning is seen as tailored products using decentralised approaches and learner-centered models may also provide the opportunity for online learning to improve critical thinking skills.

Additionally, use of case-based reasoning, flowcharts and concept maps, minute papers, problem-based group learning all may be used to further promote critical thinking in online environments. So, case studies, role-playing, simulations, streamed video, chat rooms, bulletin boards, online references can facilitate an interactive online learning environment. These activities can foster group problem solving and hence encourage critical reasoning more than the traditional classroom instruction. Another way for fostering the critical thinking skills in online courses may be by use of concept maps of the understanding of the concepts addressed in the online discussions as Novak and Gowin [13] suggest. Based on Kolb's [10] learning type of concrete experience and active experimentation, concept maps support the learners in processing and generating information and self-assessing their thinking processes. By looking at the concept map and thinking back to the online discussion the learners can see the relationships between the concepts they read and the online discussion.

3. Conclusion

Needless to say, each day we are getting exposed to a vast amount of information at an increasing rate. Similarly, social science students are expected to increase their knowledge base due to the information readily available. Yet, to build on what they already know requires critical thinking. The social science students must develop skills to not only examine logical relationships between statements but also construct arguments, respect different points of views and be flexible to

change their way of thinking if reason leads them to do so. By actively conceptualizing, analyzing, synthesizing and evaluating information, an intellectual excellence can be achieved. The social sciences faculties can contribute to this intellectual growth by especially making their students engaged in online discussions and presentation tools.

It is the researcher's belief that by making students conveyors of their ideas via use of these interactive technologies and collaborative dialogue their ability to analyze, synthesize and evaluate solutions to real-life problems may be improved. Critical thinking happens in the presence of problem solving skills, creativity and dialogical interaction that lead to the challenging of assumptions and theory generation. So, by designing online courses from the bottom up that use the university's computer networking infrastructure which allows the opportunity for peer-to-peer dialogues as well as entail an online university speaker series social science departments may enhance the critical thinking skills of their learners.

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Effects of bringing computer technology in physics and mathematics into the classroom

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Abstract

The aim of this work is to both relate my own experience with and demonstrate the effects of the use of computer technology in my teaching. In 2001 the University of Agder started a project whose aim was to increase the number of students applying for engineering studies, as well as hopefully improve their skills in mathematics and physics. The project known as parAbel developed e-learning courses for upper level students (from ages 16 – 19 years old) in mathematics and physics. These courses (six in all) could also be used in our own engineering recruitment study programme at our own university. As the project developed, we also programmed advanced simulations and a computer based graphic calculator, all under the name SimReal. Subsequently I have used parAbel and SimReal in both physics and mathematics courses at my university for approximately 5 years.

1. Introduction

In the early days of the parAbel-project [1], University of Agder [2] had a licensing agreement with Heriot-Watt University in Edinburgh and was inspired by their Scholar-programme [3]. A report [4] from the University of Strathclyde on behalf of the Scottish Executive Education Department, concludes that students who were users of the Scholar programme, exhibit an overall better performance than do other students in the same subjects. The report also states that the recruitment levels increased in technological study programmes. Students especially liked working with interactivity, simulations and problems-solving.

By varying the presentation we are able to reach more people who will become engaged in the learning process [5]. New Multimedia Technology gives the opportunity to create variations. "Students now are from the Nintendo generation. They need to see things moving to understand and process information." [6]. To meet this generation of young students, I thought why not try to meet them at the half way. Keeping what I believe is good and importance methods, such as laboratory work and

manual problem-solving. I needed to find good computer-aided programs for this. Working with the parAbel-group at our university, we developed ourselves animations, simulations and a "virtual laboratory", for this purpose [7]. We also developed an online graphically PC-computer based calculator that could work together with other simulations in SimReal [8].

Other studies [9] show that if a teacher can organize a learning arena that incorporates different working methods for gaining knowledge, the results will improve. With this background in mind I started trying out different approaches on my own students. I began experimenting with different learning arenas in 2003, and have made several adjustments since then. Similar and larger research projects have been completed at the by University of Colorado, PheT [10].

2. Innovation and relevance

Previous studies [11] and [12] suggested improvements for students using computer-aided programs and different learning arenas. It is my experience that students like the variation found by using different learning techniques.

To extend variation in my teaching, I used animations to explain difficult theoretical subjects in my lectures, see Figure 1. It makes it a lot easier to explain how a transistor works if an animation shows the inside of it. Then I could let the students work with problems using more advanced simulations on that subject, see Figure 2.

To prepare my students before manual laboratory work, I can give them exercises using a "virtual laboratory" that we developed, see Figure 3. This helps students both to know what to do and give them more understanding when entering the laboratory.

The last thing I have tried out is to let my student do exercises with the "virtual laboratory", and then write a report. The report must be sent electronically into our learning management system (LMS), which is Fronter, to be evaluated and approved. This could be exercises that is impossible to perform "live" or is too dangerous to perform in an ordinary laboratory.

We have developed several simulations that fit our ordinary laboratory-exercises.

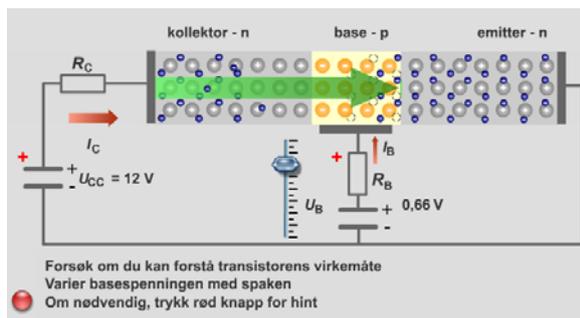


Figure 1. Animation showing the interior of a transistor.

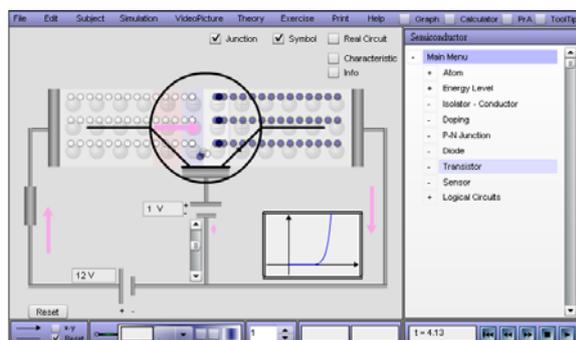


Figure 2. Simulation and exercise used on the interior of a transistor.

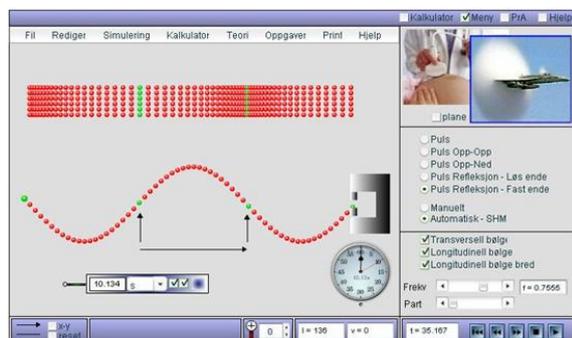


Figure 3. "Virtual laboratory", in this case students can work with and measure properties of longitudinal- and transverse-waves.

There is a lot of work ahead for teachers to find the correct resources and right programs on the computer, but the reward of finding these resources can be great. After all, isn't it having more satisfied and skilled students, what we all want? Of course, if the teacher herself/himself has good computer skills, this gives students a great advantage. Findings by Oersted at PheT [13] say that interactive simulations can be uniquely powerful educational tools, and must be carefully designed, tested and used in pedagogically effective ways.

3. Results

I have found out, after using computers in my classroom over the past six years, that it is a very positive and fulfilling experience. Let me first start by giving you some interesting data. As part of insure and keep up a good quality to our university student programs, we have repeatedly evaluation at the end of each course. Let me bring you some results of the evaluation of one of the subjects that I teach. FYS002 is a Physics course where I let students work with theoretical problems, calculation problems, exercises on computer (has to be delivered electronically the LMS), "virtual laboratory" and manual physics laboratory work. The evaluation is done in our LMS electronically with several questions about different part of the course such as;

1. How satisfied are you with the teaching given in this course?
2. Which work form has given you the best learning experience?
3. How satisfied are you with the feedback on your work?
4. How much of organized teaching have you taken part in?
5. How many hours per week have you in averaged used on this course?
6. Consider your previous knowledge, how do you consider the level of difficulty?
7. How do you consider the level of difficulty of the literature in this course?
8. Are you happy with the form of evaluation and exam in this course?
9. Comments by students if any.

I have been monitoring answers giving from year 2003 to 2007. At that point this form of evaluation ended here at the university. We now evaluate courses in a different way and not electronically as before. 2004 was the first year that computer technology was used on this course. Adjustments and improvements have taken place every year to find the right amount of how much computers should be used. In 2004 approximately 50% of student's workload was problem-solving on computers. The rest of the time students worked with theory, manual problems-solving and manual laboratory work. Feedback from the evaluation in 2004, especially from question 9: "comments by students if any" suggested, surprisingly for me, many students thought it was too much focus on computer work. So I adjusted workloads after this, to 1/3 problem-solving on computers, 1/3 theory and manual problem-solving and 1/3 manual laboratory work. After this adjustment no more comments about too much computer work have been mentioned. Comments now usually are about how much they appreciate variation and different techniques learned during the course.

I will not go in detail on each of the bullet point above, but concentrate on what I think is most interesting. I was especially interested to get results from questions 1 and 5, so I made my own investigation on these two points. I must emphasize that there is only one year, 2003 where no computers was being used. Also it is important to notice that only about 25-35% of the students did take their time to do the evaluation. However these results clearly suggest that students are more satisfied and work harder after computers made their way into this course.

Let us start with question 1, how satisfied are the students. Students could pick their opinion from six levels, ranked from 6–bad to 1–excellent. Table 1 to 5 shows the results.

Table 1. Results from question 1 2003, given in percentage.

Rating	Answers	2003
Excellent	1	6,7
Very good	2	33,3
Good	3	36,7
Fair	4	20
Not Fair	5	3,3
Bad	6	0
	30	100

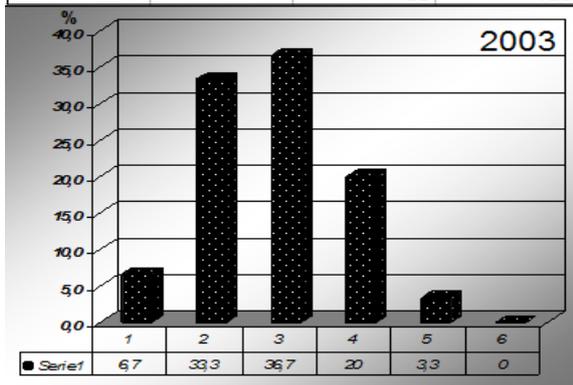


Table 2. Results from question 1 2004, given in percentage.

Rating	Answers	2004
Excellent	1	11,1
Very good	2	47
Good	3	27,8
Fair	4	13,9
Not Fair	5	0
Bad	6	0
	36	100

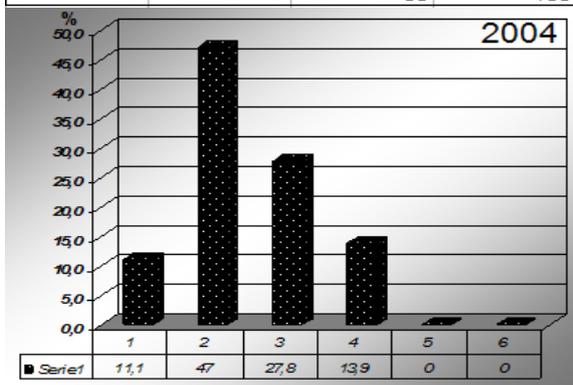


Table 3. Results from question 1 2005, given in percentage.

Rating	Answers	2005
Excellent	1	23,8
Very good	2	50,0
Good	3	16,7
Fair	4	9,5
Not Fair	5	0
Bad	6	0
	42	100

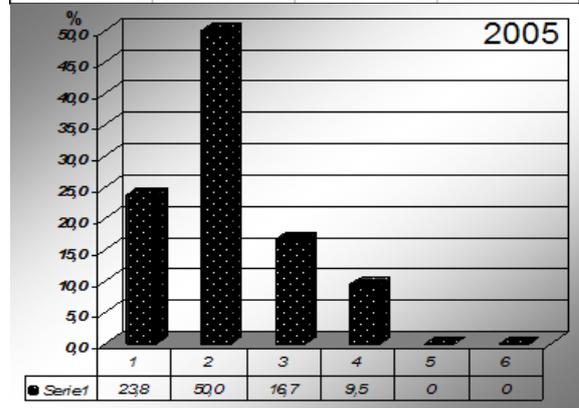


Table 4. Results from question 1 2006, given in percentage.

Rating	Answers	2006
Excellent	1	37,8
Very good	2	40,5
Good	3	13,5
Fair	4	8,1
Not Fair	5	0
Bad	6	0
	37	100

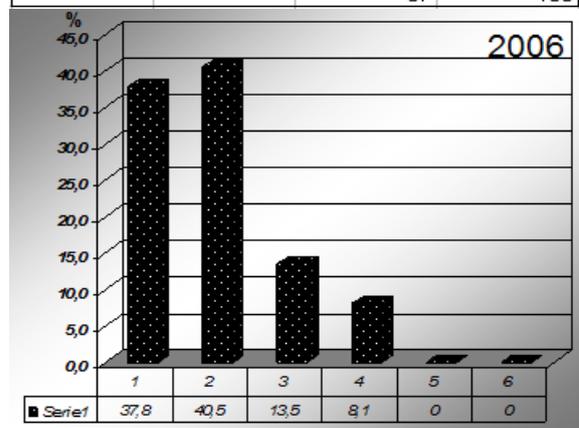
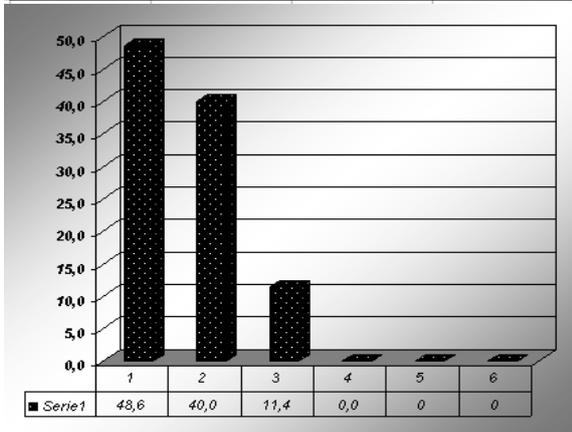


Table 5. Results from question 1 2007, given in percentage.

Rating	Answers	2007
Excellent	1	17
Very good	2	14
Good	3	4
Fair	4	0
Not Fair	5	0
Bad	6	0
		35
		100



The results in tables 1 to 5 indicate that students are more satisfied with my teaching now that I use computer technology rather than before. Comments from students also suggest that they get a better understanding of physics, the more I visualize with computers. They also think the variation of lectures, manual problems-solving, computer-work and manual laboratory work make the subject “less boring”. Actually many of my students try out, on their own many other simulations that is not part of the curriculum.

I feel now that I have found the right balance between, lectures, pc-work, manual problem-solving and laboratory work. Moreover using parAbel and SimReal is no problem for students. I use approximately 1 hour at the start of each semester to show how each program operates. Young students generally have good computer skills, so once you get them started they quickly get to work. I have experienced few technical problems, although a supportive university IT helpdesk does come in handy.

Next interesting question is number 5, how many hours per week do the students work. In this course FYS002 students should put in 6 to 8 hours per week as a minimum. FYS002 is a pre-course for students who lack competence in Physics. These students take part here to prepare them for university physics. Many of these are not the strongest candidates in mathematics and physics. In this evaluation students could pick their workload from six levels, ranked from 6 (0 to 4 hours a week) to 1 (14 ore more hours per week). Table 6 to 10 shows the results.

Table 6. Results from question 5 2003, given in hours per week.

Rating	How many hours	Number of students	2003 %
1	14 or more	0	0
2	10 to 14	3	10
3	8 to 10	4	13,3
4	6 to 8	14	46,7
5	4 to 6	7	23,3
6	0 to 4	2	6,7
		30	100

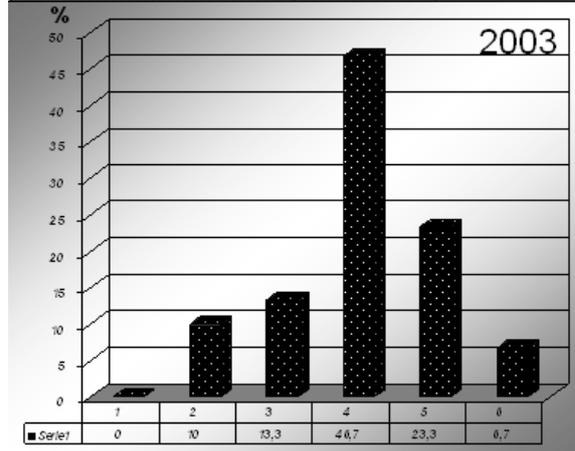


Table 7. Results from question 5 2004, given in hours per week.

Rating	How many hours	Number of students	2004 %
1	14 or more	0	0
2	10 to 14	5	13,9
3	8 to 10	6	16,7
4	6 to 8	18	50,0
5	4 to 6	7	19,4
6	0 to 4	0	0,0
		36	100

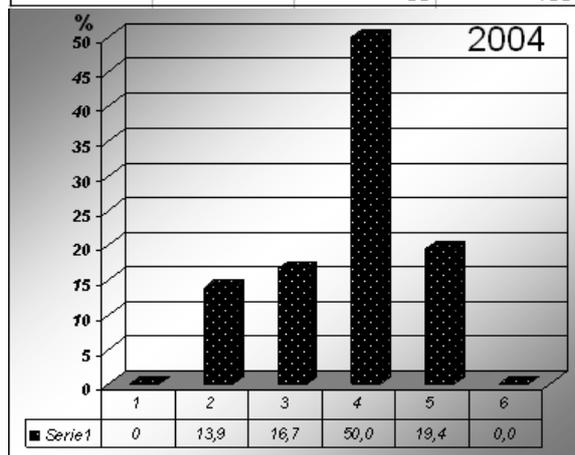


Table 8. Results from question 5 2005, given in hours per week.

Rating	How many hours	Number of students	2005 %
1	14 or more	2	4,8
2	10 to 14	6	14,3
3	8 to 10	13	31,0
4	6 to 8	17	40,5
5	4 to 6	4	9,5
6	0 to 4	0	0,0
		42	100

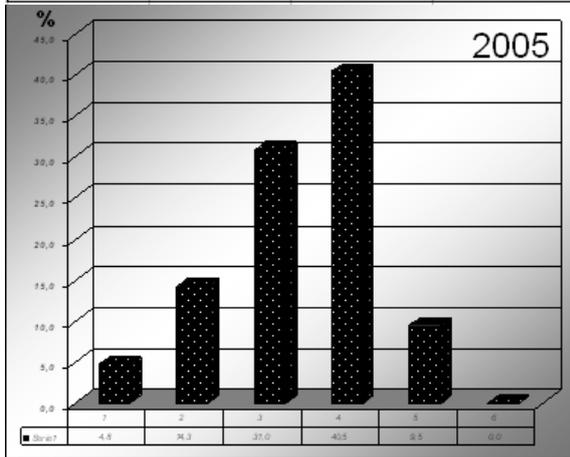


Table 9. Results from question 5 2006, given in hours per week.

Rating	How many hours	Number of students	2006 %
1	14 or more	1	2,7
2	10 to 14	7	18,9
3	8 to 10	13	35,1
4	6 to 8	13	35,1
5	4 to 6	3	8,1
6	0 to 4	0	0,0
		37	100

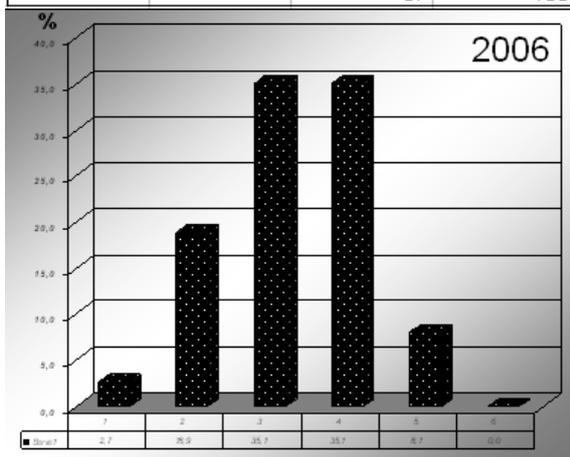
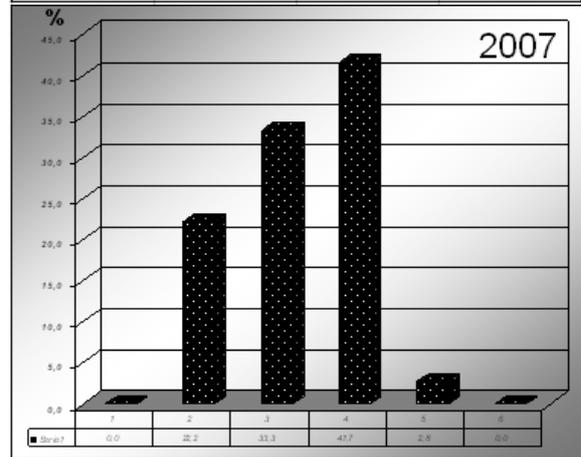


Table 10. Results from question 5 2007, given in hours per week.

Rating	How many hours	Number of students	2007 %
1	14 or more	0	0,0
2	10 to 14	8	22,2
3	8 to 10	12	33,3
4	6 to 8	15	41,7
5	4 to 6	1	2,8
6	0 to 4	0	0,0
		36	100



Since 2003, my evaluation of FYS002 (Physics-course) suggests that students now have doubled their time spent on the course. If we take a look at how many students that have used more than 8 hours a week in average (which is what we recommend as a minimum), we see that hours spent has increased by more than a factor of 2. See table 11.

Table 11. How many students have worked more than 8 hours per week (average).

Year	How many hours	%
2003	8 or more	23,3
2004	8 or more	30,6
2005	8 or more	50,1
2006	8 or more	56,7
2007	8 or more	55,5

The performance of students on exams has also been better. Grades have improved by nearly one level. Furthermore students are more satisfied with the current situation now that computers are being used. I have experienced that I can still assign the same amount of laboratory work and manual problem-solving to students, and then add computer-based assignments, without hearing them complain about having too great a workload.

One drawback for me is that it has been a lot of work to put things together. I made several "lacy-dogs" (manuals) for my students. This prevents too much questions from students about how things work. I experienced that students tend to think it is

easier to ask, rather than to find out them selves. It also gives me some extra work to evaluate and give feedback to students. But I am getting better every year at this, and have made routines that make my workload less every year. But then again, my students are happy and perform better, so extra efforts are rewarding.

4. Conclusions

By integrating computer-based work into the classroom, my experience is that students are more satisfied, spend more time studying, and most importantly perform better. Having modern facilities such as up-to-date computers, good internet connections and computer support at the university is also important. It takes time to test and use interactive simulations in pedagogically effective ways. You need to carefully investigate what works and what does not work, and then fit it into your own pedagogically platform. However I am not convinced that everybody should take computers into their classroom. If teachers are not motivated or do not feel comfortable with them, they will probably do more harm than good.

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A Case Study of ICT Projects in Education: Project Management Outsourcing

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Abstract

The increasing demand for eGovernment services has created considerable challenges for public administration, not only in terms of expertise and experience that are required in order to run development projects, but also from organizational, cultural and legal perspectives. In fact, the ongoing modernization of public administration functions is realized through a large number of complex and technology intensive projects. Most of them are co-financed by the European Union within the framework of Community Development Programmes. The need for effective implementation of such projects in compliance with the EC directives and for the seamless integration of their outcomes into the organizational structure, has driven public administration officials to seek alternative means for enhancing the operational effectiveness of departments involved in project implementation and for supporting functions related to the utilization of project results and change management. This paper describes a certain case study on outsourcing practice in the Ministry of Education and Religious Affairs of Greece.

1. Introduction

The importance of new technologies for any modern public administration has been well established long time ago and various such technologies have been implemented and are already in operation for a large number of public administrations around the world. The added value is primarily due to the automation of business processes and the streamlining of organizational activities that are possible with the use of Information & Communication Technologies (ICT). However, beyond its obvious and well established importance nowadays, the use of ICT and the optimal utilization of the ICT resources in public administration has many practical challenges both in terms of human resources needed to run the systems and in terms of maintaining and enhancing the utilization of constantly evolving ICT.

In regard to the Ministry of Education and Religious Affairs of Greece (Greek initials: YPEPTH), the use of new technologies has evolved around two main directions: (a) to facilitate and streamline the administrative processes of its administrative units consisting of a central office, the local offices and the public schools all over the country, providing at the same time the necessary interconnection among them, and (b) to support and enhance the teaching and learning practices in schools through the utilization of ICT and the introduction of novel educational activities made possible by ICT. Along these lines, over the past years a large number of ICT-related projects have been designed and implemented either by YPEPTH itself or by organizations supervised by it and acting on its behalf. As a result, a vast computer and networking infrastructure has been developed covering the administrative units and schools throughout the country (about 15.000), specialized computer systems and applications have been developed to support its complex administrative procedures, and a large corpus of educational software and computer-based educational activities have been introduced in schools supported by large scale teacher training programs (more than 100.000 teachers have been trained).

During the last 8 years, emphasis has been put by YPEPTH on e-government related issues and on implementing ICT projects whose purpose is the facilitation and support of the citizens involved in the education affairs, giving access to relevant information and services. For example, candidate teachers can now apply electronically for a teaching job in a school through an information system operated by YPEPTH.

In addition, YPEPTH implements a large number of projects that are funded by the Operational Programmes of the Community Support Framework (OPCSF) of the European Commission (EC). Such projects include ICT projects (but not only), most of which are eligible for funding under these EC operational programmes.

The development and utilization of ICT by YPEPTH on the one hand and the design and implementation of many large-scale and complex

projects on the other, have created considerable challenges for YPEPTH and unprecedented needs for the following basic reasons: (i) The organizational structure of YPEPTH is adapted to its core functions¹ that are related to education administration and it is not suitable for running projects or for providing ICT services, (ii) There is no adequate permanent personnel with the ICT project management skills and expertise required, neither is it desirable or feasible to create and maintain such expertise in-house.

In order to face such problems and enhance the performance and cost effectiveness of project related activities, the ministry decided to outsource a number of specific operations related to project implementation, including ICT projects, but also other projects as well. In this paper, we describe one such practice where the ministry enhanced the Special Programmes Directorate (a department of the ministry specifically created to run projects eligible for funding by the Community Framework Programmes) by outsourcing some of its services.

2. Literature Review

Many references exist in the literature concerning outsourcing worldwide [3]. Most of the papers in the literature deal with information systems (IS) outsourcing whereas other areas of outsourcing (like project management) are less covered. IS outsourcing has become a rather popular issue since companies like Ford or Kodak began to apply it. Nowadays, and after a long period of debate, IS outsourcing is considered as an acceptable way to deal with certain IS tasks. The main focus of outsourcing is on externalizing those organizational activities which are not directly related to the core competences of the organization [7].

At the beginning, IS outsourcing consisted of an external vendor providing a single basic function to the customer, exemplified by facilities management arrangements where the vendor assumed operational control over the customer's technology assets, typically a data center [2]. Outsourcing of information systems began to evolve in 1963 when Electronic Data Systems (EDS) signed an agreement with Blue Cross of Pennsylvania for the handling of its data processing activities. This was the first time a large business had turned over its entire data processing department to a third party. However, the real interest in outsourcing occurred during the mid-1980s when EDS signed contracts with Continental Airlines, First City Bank and Enron. Later on, outsourcing evolved from the one vendor – one

client arrangement where the vendor provides apparently all IS services to its client, to complex arrangements involving multiple vendors and multiple clients (see for example the 'cluster' deals entered into by Australia's Federal Government).

More recently, the industry has seen the growth of two new areas of IS outsourcing – web and e-Business outsourcing where vendors are contracted to provide web-based applications to enable a firm to enter the e-Business era. The latter practice is usually referred to as Application Service Provision (ASP) [4].

Public administration (PA) also started experimenting with IS outsourcing processes driven by market and political trends [3][9]. The UK's Compulsory Competitive Tendering (CTT) was probably the first relevant example, introduced during the 80's at the local administration level [6], while the USA's National Performance Review (NPR) employed IS outsourcing during the 90's [5]. Many other countries have followed these initial exemplars and some methodologies such as the "Euromethod" [11] have been devised to help with this process.

Currently, PAs are investing large amounts of money on IS and information technology in general. According to Gartner, the USA Federal Government spent \$66 billion on IS/IT goods and services in 2006 and 11% of professional PCs worldwide were purchased by government agencies. The procurement of such systems and services is mainly done through market suppliers [6].

Outsourcing Project Management (PM) tasks is another, slightly different concept. When an organization or a public authority is aware of its weaknesses regarding project management, one solution is to outsource these activities to someone with the appropriate expertise. Outsourcing project management tasks [8] brings certain benefits, but also has its limitations. An experienced PM service provider could enrich project teams in a public organization by bringing along project tools and techniques that have been proven effective in practice and also by infusing a different project-oriented work culture. On the other hand, the effectiveness of outsourcing Project Management functions is highly related to a public organization's administrative structure and processes and their resistance to change. Indeed, public administrations have not yet implemented a PM culture. Introducing PM professionals into this environment requires strong support from the top management, otherwise results will be limited. Furthermore, the expectations should be realistic regarding how much a project could be improved by outsourcing the PM tasks: if the project lacks sponsors' support, or is not well defined, or resources are inadequate, then there is no tool or technique that will save it from problems.

¹ The ministry's core function is to provide educational services, to administer teachers and schools, to prepare curricula for the primary and secondary education and to supervise public universities throughout the country.

3. Outsourcing in the Ministry of Education in Greece

In this section, we describe a specific outsourcing practice of YPEPTH. The outsourcing refers to the functions of the Special Programmes Directorate (Greek initials: EYE) of YPEPTH covering a time period from November 2007 to the end of December 2008.

3.1. The need for outsourcing

Near the end of 2007, it became clear to YPEPTH officials that the performance of the projects under the responsibility of EYE were lagging behind expectations in terms of progress of implementation and absorption of budget and that the deadline for completion of all approved EC projects (end of December 2008) was fast approaching. So, it was critical to take immediate measures in order to enhance the performance of EYE and to speed up the process of implementation of all its projects (total budget of 630 million Euros).

The concept of project management and all the associated functions like scheduling, budgeting, deadlines, resource allocation, reporting, etc., do not fit well into the organizational structure of a public authority like YPEPTH neither it is its core business, especially for projects involving new technologies that are dynamic in nature. Additionally it does not have the culture and adequate expertise to implement projects. In fact, most of the ministry's professional staff are assigned jobs related to their primary domain expertise (i.e. educational experts), or they are involved in necessary administrative work. However, some of the staff (mostly school teachers dispatched to the ministry) has acquired some project management skills after years of involvement, but they are not permanent in such jobs (not permanent in the sense that there are no official placements with that job description) neither are they enough in number for the workload required. On the other hand, hiring additional permanent staff with the appropriate skills to run projects is not considered feasible due to lengthy and complicated hiring procedures in the public sector.

In regard to ICT expertise, there is a rather small number of employees of YPEPTH with certain ICT expertise who are mostly school teachers with specialty in informatics dispatched to the ministry. Primarily, such persons belong to the department of ICT infrastructure of YPEPTH and they are involved in monitoring the operation of some critical infrastructure of the ministry. A smaller number of them are assigned to other departments of the ministry including the Special Programmes Directorate specifically created to run projects (see below). However, there is no established systematic

way of maintaining in house expertise on ICT products and services. So, the ministry needs very often external specialized ICT experts to solve its everyday problems.

For all the above reasons, outsourcing some activities related to project implementation has been considered by YPEPTH as absolutely necessary. The Research Academic Computer Technology Institute² (RACTI) has been selected by the ministry officials to perform such functions. RACTI has the legal credential to be assigned such a task as a private institution supervised by YPEPTH, while at the same time it has extensive expertise on PM issues. For this purpose, it was assigned some of the tasks of EYE, including the overall management of the directorate. Within this framework, RACTI created the Ministry of Education Support Office and staffed this office with a group of experienced personnel to carry out the job of supporting the functions of EYE. It was not the first time that such work assignments of YPEPTH to RACTI took place. In fact, for many years RACTI has been a technical consultant of YPEPTH undertaking the implementation of a large number of specific ICT projects on behalf and for the benefit of the ministry. However, such cooperation was basically on a yearly contract basis. This time, the ministry essentially created a strategic partnership with RACTI and delegated to it some of its non core functions related to project implementation.

3.2. Implementation and challenges

The Special Programmes Directorate (EYE) of the Greek ministry of education had been created in 2002 for the purpose of designing, monitoring, organizing, coordinating, supporting and evaluating projects funded by Operational Programmes of the Community Support Framework [10] and which are of interest to the ministry. For every project that EYE undertakes on behalf of the ministry, it has the responsibility to run all necessary operations for its implementation, from start to completion. It does so in close cooperation with the appropriate (for each project) department(s) of the ministry or the appropriate supervised (by the ministry) organization(s) that are the stakeholders and responsible for the utilization of the deliverables and/or the operation of the project. Furthermore, EYE is subject to audits performed by designated authorities during or after the end of each project.

Some examples of projects undertaken by EYE are:

² The Research Academic Computer Technology Institute (www.cti.gr) is a Non Profit Private Legal Entity ("NPID" under Greek Law), supervised by the the Greek Ministry of Education and Religious Affairs, and constitutes an independent institution at the financial, administrative and scientific level.

- Implementation of a Data Center as well as the appropriate applications for the administrative processes of YPEPTH. This infrastructure serves as a basis for main eGovernment services that YPEPTH will offer to the users.
- Digitization and archiving of books of the Public Libraries of Greece.
- Teacher training in ICT skills.
- Procurement and installation of ICT and special equipment at schools for students with special needs.
- Resource management, including human resources management.
- Direct contribution to certain important projects of EYE.

The first task of R.A.CTI's team was the overall assessment of the situation of each distinct project undertaken by EYE on behalf of YPEPTH. It is pointed out that there were 45 projects with a total budget of 630 million Euros and that the percentage of implementation (in regards to budget absorption) was quite low at less than 10% at the time the support office started its operation near the end of 2007. Furthermore, the schedules for all projects were very tight due to the fact that the official programmatic period was about to end in December 2008 and all EU funds of all projects should have been absorbed by that time, otherwise they would be lost.

Considering the work that had to be done for a successful completion of the projects, the human resource requirements were estimated per role and per project and a review of the available personnel at YPEPTH was conducted in terms of skills in project management and ICT. Based on this information, it was possible to some extent to rationalize the distribution of workload on people and make the right assignments of jobs to individuals, wherever that was legally and administratively possible.

The work of the members of the team can be categorized as follows:

- Codification and rationalization of administrative and technical procedures involved in the implementation of projects. Redesign and/or fine tuning of some projects.
- Definition and creation of a monitoring & Support scheme during the entire lifecycle of all projects concerning legal, financial, technical and administrative issues.
- Task management. Streamlining of tasks to the units of EYE and scheduling of activities. Specific task lists on a daily basis, assignments of tasks to persons.
- Communication management: Communication with appropriate authorities and stakeholders.
- Technical processing of calls for tender for consistency, soundness and compliance to rules and regulations.

Each project has its own complexities and peculiarities, schedule, budget and rules of eligibility for funding under the Community Support Framework Programme. Some projects are interconnected in the sense that the intermediate or final results of some are prerequisites and/or should provide input to others. All projects have to follow strict rules and procedures throughout their implementation dictated both by the specific eligibility requirements for funding, as set by the EC, and by the general procurement rules that should be applied for the assignment of all public projects to outside contractors. Adherence to the rules and procedures is a prerequisite for the eligibility for funding and is subject to multiple layers of controls and audits by the supervising authorities (both national and EC authorities) even after the end of a project and for a period of 5 years afterwards. Deviations from the rules at any time and for any action related to a project may render the entire project ineligible for funding by the EC and may result in financial damages for the ministry. In order to avoid such eventualities and enforce full compliance to the law, the ministry (like all public organizations implementing projects) has set up internal procedures requiring, among other things, that any decision taken in the course of the implementation of a project should pass through the regular chain of command of the ministry and be duly signed and dated by the appropriate officials each time.

On the other hand, there is a great variety of projects all of which are subject to the same rules and regulations. All projects have to be coordinated by the same pool of people, primarily by the staff of EYE. Due to human resource constraints it is neither feasible nor would it be practical and cost effective to have distinct project teams for each project. So, there must be overlaps and the same person may be involved in several project teams and in different positions in them according to his/her skills and the special needs of each project.

One major challenge for RACTI's team was the effective combination of two different requirements: (i) enforcement of efficiency, speed, deadlines and results in the work environment of a public organization, and (ii) full compliance with rules, regulations as well as with the internal procedures of YPEPTH in all phases of all projects under implementation. In order to achieve a workable combination of these factors, the team had also taken into consideration that for all actions within the framework of the implementation of projects, the staff of EYE and the ministry officials were legally

liable in the end, for any mistakes or omissions. So, all actions were carefully designed so as to avoid such situations while enforcing efficiency and speed.

The team utilized its expertise and experience in project management as well as its work culture to establish a working relationship and mutual trust with the people of EYE. A deep understanding of the work culture, the procedures, the rules and the existing administrative structure of YPEPTH and EYE was necessary so as to properly align and fine tune the initiatives of the team with the mechanism of EYE. A lot of effort on the part of the team had to do with finding appropriate trade-offs among the requirements for efficiency in project implementation, the rules and procedures that had to be followed at every step, the work culture of the people and the administrative structure. Cooperation, team spirit, smooth adaptation, continuity, efficiency, strict adherence to the rules and working within the system, were basic principles that were followed throughout this endeavor. As a result, an effective mechanism was created and is currently operational, that balances such factors sufficiently well and delivers projects on time and within budget.

4. Discussion

Outsourcing project management tasks appears to be necessary and beneficial for a public authority when complex and demanding development projects have to be implemented. The main reason is that the implementation of such projects is not a core business of a public organization; hence, its organizational structure and work environment are usually not appropriate for such endeavors. On the other hand, more often than not, there is a considerable resistance to change in a public organization. However, change and adaptation are key words for any such project and, also, the main objective and prerequisite in most cases.

In regard to the work presented here, one of the significant benefits of YPEPTH from outsourcing to RACTI certain project management tasks, was that RACTI's team, apart from its expertise, brought along certain project management tools and techniques that helped improve overall projects' results. So, a technology transfer to YPEPTH's staff regarding all these tools and techniques has taken place and continues on. On the other hand, the interaction among staff members of both organizations (that is absolutely necessary for any project and at any phase of its lifecycle), resulted in an infusion of certain work habits and culture of RACTI's staff (that is similar to the work culture of the private sector organizations) to YPEPTH's staff. It also resulted in the creation of a team spirit to the mutual benefit of both organizations. Such a

cooperation and work environment was to a certain extent necessary due to the requirements of the projects and the overall work that had to be done in a narrow time frame.

5. Conclusions

As far as results are concerned, during a period of a little more than one year (Nov. 2007 – Dec. 2008), there was an impressive improvement of the effectiveness of the directorate in terms of rates of progress in project implementation. In fact, in terms of budget absorption which is an easily measurable performance index, although it does not fully reflect the implementation project, the percentage was about 10% at the end of 2007 and increased to 80% by December 2008. In addition to the above, all audits that have been performed so far by the designated authorities for a variety of projects have been successful and no deviations from legal rules and procedures were detected whatsoever.

Finally, it should be pointed out that the overall outsourcing experience described here has given rise to a new mentality and know-how toward organizing the implementation and integration of large and complex projects into a public organization. It was the source of valuable experience for the creation of rules, procedures and methodologies that can potentially help the ministry of education handle its future challenges.

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Session 7B: ICT Education, E-Learning and Distance Education

An Analytical Study of Extramural Possibility in Dhofar University
(Amal Al-Dujaily, M.J Al-Fallogi)

The Effect of Using the Computer in Teaching Research Methodology to Educational College Students on their Achievement (Atif Bin Tareef and Mallouh Alslaihat)

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Flexible E-Assessment for Accommodating Diverse Learning Styles
(Tendai Dube, Minhua Ma)

An Analytical Study of Extramural Possibility in Dhofar University

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Abstract

This study explores the possibility of employing the extramural study method in Dhofar University (D.U), the oldest private university in the Dhofar region of the Sultanate of Oman. The authors observed an increasing interest in extramural study, especially for theory based courses. A survey was conducted at D.U. covering a sample size of 225 participants: 210 were tertiary students and 15 faculty members. Survey results indicate that many D.U. students hope to obtain degrees externally, whether fully or partially, through extramural study. Female students, in particular, seek to continue their studies extramurally due to cultural factors, traditions, and family commitments. Other factors such as study costs, employment, social status, living conditions and transportation have presented obstacles to women in pursuing higher education. By aligning students' and lecturers' recommendations from this survey, we conclude that some changes in course delivery need to be made in order to create more learning opportunities for all students. This teaching system requires a more elastic, but realistic, approach with the option of theory based extramural courses. Such a system would offer educational flexibility as well as financial benefits to the university and the larger Dhofar region.

1. Introduction

Studying by distance education (extramurally) has become increasingly popular among the Omani students and throughout the world [1, 2, 3]. Over the past 5 years, several thousand Omani students have joined universities in the neighboring countries that offer qualification degrees via distance learning [4].

Dhofar University has both the potential and the need to commence a distance learning study program. Since D.U. has the advantage of leading Oman's private institutes of higher education for being an older organization with records of academic excellence that has an international reputation for quality research. In addition, as a private university, D.U. is not restricted to adopting a full-time study method as are Omani public universities. The nature and location of the Dhofar region on the Great Arabian Desert border, 1100km from the

capital Muscat, increases the need for an extramural study program which could benefit students, the university and the entire region.

In accordance with the factors that have created the need for extramural study for Oman's students, the recommended option is the combined use of CD-ROM [7] and IDL (Integrated Distance Learning) system [8]. This recommendation is based on the fact that delivery of courses and testing materials by this recommended system is fairly straightforward, which ensures its availability to the student and he / she can view it at any time. However, problems arise when the student is required to complete assignments, quizzes or exams. In this case, the student will need to physically attend at least once by the end of each semester.

2. Background

Distant education is not a new method of learning. It has been used for more than a century. The University of London was the first university to offer distance learning degrees, in 1858 [2]. The first correspondence school in the United State was founded in Boston by Anna Eliot Ticknor in 1873. In Australia, the University of Queensland established its Department of Correspondence Studies in 1911 [5]. Another pioneering institution was the University of South Africa, which has been offering Correspondence Education courses since 1946. In New Zealand, university-level distance education or extramural study began in 1960 at Massey University. The largest distance education program in the United Kingdom is the Open University, which was founded 1969. In Germany the FernUniversität in Hagen was founded 1974. In 2006 the Sloan Consortium reported that more than 96 percent of the largest colleges and universities in the United States offered online courses and that almost 3.2 million American students were taking at least one online course during the fall 2005 term [6].

As a part of distance learning, extramural study focuses on pedagogy (strategies of instruction), technology, and instructional [1] systems designs that deliver education to students not physically "on site". Rather than attending courses in person, teachers and students may communicate through printed or electronic media, or through technology that allows them to

communicate in real time and via other online methods. Distance education courses requiring some on-site attendance is considered a 'hybrid' or 'blended' course of study. There are many ways of delivering courses extramurally to choose the best fit for the teaching environment of the university.

3. Research Method and Questions

The research was carried out using the survey method which was conducted with students and faculty members of D.U. The two major survey questions used for the students: "Are Omanis students familiar with extramural method of study at the Tertiary level? If YES, would they prefer this option over the current method; and, if so why?"

The academic staffs were also asked: to what extent do they support the extramural study method for DU students?

3.1 Participants

A stratified random sample proportional to the size was taken from both students and members of staff at Dhofar University. A total of 108 male and 102 female students representing 5% of the total enrollment were selected randomly from the most popular departments of Commerce and Business Administration Collage within the university, taking into account the size of each selected department. The faculty sample of 15 university lecturers was selected on the same basis

3.2. Survey Findings

Part I: Students

1. Almost 50% of Omani students had no idea about extramural method of learning and were only familiar with the traditional methods offered at their local instituting of higher education. While nearly 53% of male students had previous knowledge of the existence of this method. Only 46% of females were familiar with the extramural study method. Lack of professional quality marketing may be the reasons for this result.

2. Working students are relatively more familiar with extramural study than the non-working students: Working females are very small in proportion to male working students and yet students' employment is generally not so common in the Gulf region.

3. Omani females prefer extramural methods of learning relative to males at $p < .05$; the female preference ratio is 63.7% compared with 54.5% for male. Younger females in particular prefer more of the learning style of extramural 71.2% comparing with 31.6% for younger male. Such results are of course surprising; nevertheless, it

shows how important studying from home is to young women affected by culture and other factors like family traditions.

4. There is an overall age-group effect on students preferences such that older students prefer extramural more than younger students at $p < .05$. This is a pre-predictable result since most of the older generation students are either engaged in employment, family concerns or both and thus have less time devoted to traditional ways of learning . Also, 90.5% of employed students prefer extramural learning method compared to 51.2% of unemployed students. The p-value is significant at $p < .01$, indicating a highly significant employment effect on student's preferences. Similarly, students preferences are highly affected by social status $p < .01$. Almost 91% of married students prefer extramural study compared with 53.4% of unmarried students.

5. There is a significant location effect of $p < .05$. Regardless of gender or age group, most students living in rural area prefer extramural study compared with students living in urban area. This indicates that students' location has a considerable effect on the students' presence of learning methods. Students living far away from educational institutes prefer more comfortable way of learning such as distance learning or extramural. Moreover, students paying their university fees prefer to study in cheaper way like extramural very unlikely to those having full or partial grants. 91.4% of self supported students prefer extramural comparing to 19.1% of students with government or companies grants.

6. Students' preferences towards extramural study depend on their specialization and the subject's materials that they are studying. Table 1 shows that students in certain departments such as Marketing, Business and Finance are supporting the extramural method relatively more than those students studying in MIS or Accounting departments. However, student's preference varies from 50% in the Finance department to almost 90% in the Business department. These specializations, of course, need relatively less face to face interaction between students and instructors than Accounting and MIS need.

Table 1: Preference of Extramural by Departments

Preference/Dept.	Yes	%	No	%	Total
Marketing	34	81.0	8	19	42
Business	41	89.1	5	10.9	46
MIS	33	39.3	51	60.7	84
Finance	8	50	8	50	16
Accounting	8	36.4	14	63.6	22
Total	124		86		210

Part II: Faculty Members

Regardless of gender younger staff are less familiar with extramural than older ones, 33.3% compared to 66.7%, reflecting significant differences ($p < .05$) in extramural familiarity related to faculty members' age. The faculty members' support of extramural study is strongly dependent on their field of specialization. The results show that 100% of tutor in marketing department are pro-extramural.

4. General Conclusions

Omani students are in some way familiar with the extramural method of study; many of them have experienced this method in high schools; more specifically in the pre-university level. However, this facility is not available in Oman at university level; consequently, some irregular attendees join universities which offer some degrees via the extramural method, mainly in Yemen, Lebanon or in Egypt.

From this survey, we have observed a strong demand for the extramural study, at least for some courses. The majority of Dhofar university's students, predominantly females wish to obtain their qualifications externally either fully or partially by the extramural method. Multiple reasons were given with this regard but we found that cultural restrictions, family traditions and family commitments were among the most important ones. Other reasons such as: the costs of studying, employment, social status, living status and transportation were also among the important ones but were given second priority.

The lecturers whom participated in this survey agreed upon the need for having an elastic but realistic method that allows for some courses to be covered by extramural. Lecturers were a bit conservative about the idea of having a full on extramural option of study as they have their doubts about the students' self-reliance standards. Moreover, distance education has long had trouble with testing. The delivery of testing materials is fairly straightforward so that they are available to students who can read it at their leisure. The problem may arise when student is required to complete assignments and tests. Online courses have had difficulty controlling cheating in quizzes, tests, or examinations because of the lack of teacher control. Some schools address integrity issues concerning testing by requiring students to take examinations in a controlled setting. A minor number of lecturers also fear that greater work commitments would be needed when combining extramural along with the traditional method of teaching.

5. Recommendations

It is vitally important for any region to have at least one university offering some degrees via extramural studies given those students' circumstances may vary; nonetheless, they should all have the opportunity to continue their studies in spite of their differences. Not all students are able to attend classes on regular basis. Also, not all the students can afford to pay a full fee. Extramural method is suitable not only for female students but also for those living in rural areas that struggle from consistent hardship, it is ideal for both male and female students with family commitments. Economically, it has a great value of keeping the funds inside Oman rather than spending it abroad. On the other hand, the disadvantages of the extramural study can be reduced by creating a more developed program for increasing learning performance and students' consistent evaluations. Cheating can also be reduced by adopting a variety of methods to discourage cheating as well as increasing the number of quizzes, but the safest way at the mean time is to have the students complete the main examination at a controlled examination venue at the end of each semester.

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The Effect of Using the Computer in Teaching Research Methodology to Educational College Students on their Achievement

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Abstract

This study aimed at identifying the effect of using the computer in teaching and its effect on student's achievement in teaching research methodology. Questions of this study have been formulated in the following zero hypotheses: There are no statistically significant variable ($\alpha=0.05$) in students college achievement in research methodology which can be attributed to teaching method. There are no statistically significant variables ($\alpha=0.05$) in college students' achievement in research methodology attributed to student major. The analysis approach has been used in this study in order to discover the effect of using the computer in teaching research methodology for college students for the second term of the academic year 2007-2008. A special questionnaire with 5 Likert scale has been used to measure students' achievement by using the computer in learning research methodology.

1. Introduction

Revolution of the immense scientific progress in information systems and communications technology had been accelerating in all human activities a matter which has facilitated means of contact and communications and means of exchanging information and expertise among countries of the world, As a result the world has become a small village. The recent concern about the quality of education in Jordan has contributed to the rapid growth in the number microcomputer being used in classroom. This progress is attributed to the development in the field of computer, this development which has minimized gaps and made easy the process of communications besides minimizing time and effort. This computer in flux all human activities has become one aspect of our present time due to the changes of all the civilized life, we are thus required to bring about such changes and comprehensive cultures and policies that guarantee getting rid of the traditional stereotype in our life and deepen the scientific analytical and empirical methodology in our practical life activities

one of the procedure to solve the socio-economic and political problems.

These rapid developments which the world has been witnessing have invaded all human life's aspects, particularly the technological revolution. Through this event, educational systems so that technology can take its role in the new educational systems and contribute in providing the learners with the necessary skills and knowledge that promote their thinking and help them to deal with the increasing scientific know-how which made it impossible for the human mind to follow and cope with this huge influx of knowledge and information.

Due to the increasing need for creating more effective learning environment capable of caring for individual variables among learners, educationalists in the field of computer technology have found an effective means regarding human thinking types and knowledge acquisition by learner-Finn in (Hamdi and Alweidat) has described the computer as an assistant means in education. He says that CAL is a new visitor that enjoys great popularity among students. It has a high capability of distinguishing individual variables among students. Computer Assisted learning, especially in teaching statistic provides the suitable opportunity for the student in order to learn according to his own potential and environment. This method is built on the principle of self learning and adaptation according to student's level of education, a matter that enables him to proceed in learning fast as possible, correcting his mistakes without being ashamed of before his peers besides being given the times without any boredom or embarrassment. CAL is rich in diversity of examples and drills thus the student is given more opportunity to be acquainted with more than one soled example and to do many drills-this will increase his statistical competence and deepen the concepts in his mind.

2. Statement of problem and questions

This study aimed at identifying the effect of using the computer in teaching and its effect on student's achievement in teaching research methodology through the following questions:

Questions of this study have been formulated in the following zero hypotheses:

1. There are no statistically significant variable ($\alpha=0.05$) in students college achievement in research methodology which can be attributed to teaching method.
2. There are no statistically significant variables ($\alpha=0.05$) in college students' achievement in research methodology attributed to student major.

3. Objective of the study

The problem of the present study is defined by being an attempt to increase student's achievement in research methodology. Since Computer Assisted learning (CAL) and teaching is one of the effective keys to achieve their aims (purposes), this study tries to verify this type of teaching for this capability.

4. Study Significance

Computer Assisted learning (CAL) is regarded as one of the aspects that had been enjoying an increasing interest and care in the field of learning and teaching in the Arab world, because using the computer as an assisting means in instruction has achieved a great success in the field of learning and teaching in the technologically advanced countries according to the studies conducted in their societies. The aims of teaching research methodology witnessed many different stages. Formerly, the main aim of teaching research methodology was to concentrate on accuracy and speed in thinking processes. But the rapid scientific progress in the field of technology has minimized this aim, for the small calculator can perform these processes at accurate high speed, hence the aims of teaching statistic have changed and become to concentrate on understanding and comprehension besides the skill in the basic statistical processes.

In discussing types of the computer as a means in teaching research methodology, Al-far 1994 identifies some types of learning and teaching statistic by using the computer which is regarded as an environment of learning which provides interaction between the learner the computer. Among these types are: explaining certain subjects such as tutorial, Drill and Practice, Diagnostic measures, Simulation, and instructional Games which lead to improving teaching outputs. More specifically, this study tries to answer the following hypotheses.

5. Limitations of the study

To limit the finding of the study, it has been confined to:

- A sample of students in educational college at university of Jordan.

- Nature and construction of the program.
- It was done in the second semester of 2008\2009.

A special questionnaire with 5 Likert scale has been used to measure students' achievement.

6. Literature Review

Many studies have been carried out on the effective of using the computer on students' achievement in statistic and other subjects, and their attitudes towards using the computer in instruction.

The following is a review of literature for the period which started in 1990; the period which has witnessed the technological and scientific progress in all walks to life. The studies that tackled the effect of using the computer on student achievement. Abuyounis conducted a study aimed at identifying the effectiveness of using the computer in teaching vacuum geometry for second-year high school students (scientific stream). The study was carried out on a sample consisting of (176) male and female students of Al-Qunaitra governorate. The sample was divided into groups: experimental consisting of (89) male and female students. The experimental group studied vacuum geometry through a computerized program that was designed to teach this subject, while the control group studied the same subject through the traditional method. The researcher prepared and achievement test in vacuum geometry and a questionnaire to measure students' attitudes towards using the computer in instruction. The researcher applied Before/After achievement test and the questionnaire which he prepared to measure students' attitudes towards the computer. The study findings indicated statistical variables at ($\alpha=0.05$) in students' achievement in favour of the experimental group, and statistical variables at ($\alpha=0.05$) in students' attitudes towards using the computer in favour of the experimental group, while no statistical variables were found at ($\alpha=0.05$) in students' achievements that can be attributed to sex statistical variable were found at ($\alpha=0.05$) in students' attitudes towards using the computer which-can be attributed to sex in favour of the female students (Abu Younis, 1996).

Khasawneh's study aimed at investigating the extent by which students comprehend the basics of programming in Logo and their understanding to some engineering concepts through the language of this programming. She also studied the mistakes committed by students in programming basics using Logo. The study sample consisted of (544) male and female tenth-grade students in Irbid for the year 1991-1992. Six schools were chosen randomly- Nine schools with 289 female students and 7 schools with 255 male students. The sample members studies some engineering concepts through a Logo

computerized program. The statistical analysis results showed statistical variables ($\alpha=0.05$) between the mean of students' performance on the engineering concepts test computerized by Logo, and the mean of their expected performance where their performance was less than expected. Statistical variables were found between the mean of their performance on the achievement test on the concepts of the circle and polygon that can be attributed to sex variable in favour of males, while no statistical variables were found on students' performance on revolution angle concept that can be attributed to sex.

Al-Ali carried out a study to identify how effective is it to teach statistic by using the computer for fifth primary grade. The study sample consisted of (44) male and female pupils of fifth grade in Applied schools in Damascus. The sample members were divided into two groups: control and experimental with 22 male and female pupils for each group. The experimental group studied the geometric shapes by using a computerized instructional program, while the control group studied the same subject by using the traditional method; members of the two groups were exposed to Before/After achievement test in geometrical shapes for fifth primary grade. A questionnaire was distributed among them to measure their attitudes towards using the computer. Finding indicated statistically significant variables in the students' achievement in statistic at ($\alpha=0.05$) in favour of the experimental group. Statistically significant variables were also found in the students' attitudes towards using the computer in favour of the experimental group.

In an analytical study, Ali and Al-Takriti carried out this study on sample consisting of (52) male and female students at the Department of Statistic, College of Education, university of Baghdad. The sample was divided into two equal random groups: one is control group and the other is experimental. The study aimed at identifying the effect of using the computer in matrices which the experimental group studied using a computerized program in matrices, while the control group studied the same subject through the traditional method. Finding showed statistical variable at ($\alpha=0.05$) between the mean of the two groups with regard to achievement in favour of the experimental group.

Al-far carried out a study aimed at identifying the effect of adopt tutorial as one of the types of learning statistic through CAL on first-year high school students' achievement in the subject of "Sets" and their attitudes towards statistic. The student sample consisted of 240 first-year high school students in Tanta of the Republic Arab of Egypt. The sample was divided into two random groups: control and experimental. Each group consisted of (120) students-students' attitudes test toward statistic was first applied. The control group studied sets by using

the traditional method, while the experimental group studied the same subject by using the computer and adopting the tutorial method and under the teacher's supervision. The teaching of the subject took some weeks two lessons a week. At the end experiment, an achievement test prepared by the research was applied on the members of the two groups. Students' attitudes test towards statistic was applied. Study findings showed statistically significant variables at ($\alpha=0.05$) between the mean of the two groups in achievement in favour of the experimental group, and statistically significant variables at ($\alpha=0.05$) in students' attitudes towards statistic in favor of the experimental group (Al-far, 1994).

In 1997, Baker and Hale conducted a study on students at various levels ranging from primary to post-high school to computer CAL with the traditional common methods in education. The study findings revealed statistically significant variables in students' achievement between the control group who studied subjects through the traditional methods and the experimental group who studied the subjects using the computer. The experimental group's achievement was higher than that of the control group. Students also had positive attitudes about the subjects they studied such as statistic social and human sciences.

Sashaani's study [15] which was conducted on a sample consisting of (1754) male and female students of the ninth and twelfth grades in Pittsburgh in America, aimed at knowing the effect of sex on students' attitudes towards statistic and the computer. The researcher applied the attitudes standard which consisted of the following dimensions: interest in computer, trust in the computer, and connection between sex and the computer. The study finding showed that male students are much more interested in computer, and the trust computer more than females do. They also revealed that there was equality, between the two sexes in ability and skills of using the computer, and that there is a positive relation between the attitude towards the computer and towards statistic. The finding attribute the reason behind lack of interest and achievement to a social factor, not to an organic one.

Szabo and Poohkey's [16] study was on a sample consisting of 174 tenth-grade students' to identify the relation between students' achievement and their attitudes towards the computer. The sample was divided into two groups: controlled experimental. The control group studied data graphics in statistic through the traditional methods, while the experimental group studied the same subject by using the computer. At the end of the experimental, the researcher applied an achievement standard in statistic (graphics), he also applied standard to measure students' attitudes towards the computer. The finding showed statistically significant variables between the mean of the two group members' scores

on the achievement test at $\alpha=0.01$ a favor of the experimental group. They also showed positive attitudes among students towards using the computer in teaching statistic.

7. Methodology and Procedure

The analysis approach has been used in this study in order to discover the effect of using the computer in teaching research methodology for college students for the summer term of the academic year 2007-2008. A special questionnaire with 5 Likert scale has been used to measure students' achievement by using the computer in learning research methodology.

7.1. Study Community

The study community consisted of all educational students in the University of Jordan for the second term year 2008-2009.

7.2. Study Sample

The study sample consisted of (160) students of educational college in university of Jordan. The study sample was divided into two sections and each section consisted of 80 students. Two sections were named as control and the other as experimental. Table 1 below shows the sample distribution according to method.

Table 1. Sample distribution

Major	Control group	Experimental group	Total
Science	10	12	22
Arts	70	68	158
Total	80	80	160

8. Reliability and Constancy of the Achievement Test

To make sure of the reliability of the test, it was referred to a group of referees consisting of (16) members who were distributed a teaching staff members at the faculty of Educational Science from Metuh University's fellows: 6 teaching staff members at the faculty of Educational sciences, University of Jordan, two educational supervisors, five computer teachers at the Ministry of Education. They were asked if the items of the questionnaire expressed the student's achievement, or if the language was correct. After receiving the committee's suggestions, the questionnaire was amended and finalized. The questionnaire contained (40) items, "(80) of which were positive and (10) passive. Each item contained five choices according

to liker scale: Strongly agree, agree, do not agree, and strongly do not agree. The approval of 80% of the referees was considered to be that the questionnaire was reliable. Students' attitude towards the computer can be identified by checking his total answer mark. If his total mark was (120) or more and approaching the total highest mark (160) on this scale, the student's attitude towards the computer highly positive. If his mark was (80) or less and approaching the lowest mark (40) on this scale, the student's attitude was negatively low. If the mark fails between 80-120, the student's attitude towards the computer was fair.

8.1. Constancy

To measure the constancy of the questionnaire, it was applied on (30) students other than the sample students. Four weeks later it was also applied on the same group. The constant factor was 0.86 which was considered to be suitable for the purposes of this study.

9. Methodology and Procedures

During the second term of the academic year 2008-2009 in Jordan, a special questionnaire similar to 5 likert scale has been used to measure students' achievement using the computer in research methodology.

- The researcher got permission from the University of Jordan to apply his study on male and female students of the educational college, which were provided with computer and this served the purposes of the study.
- The researcher held a meeting with the teachers of research methodology students of the university of Jordan, where they provided the teachers with the tools of the study, explained the aim behind the study, showed how mechanism of the study should be presented to students and showed the instructional.

The researcher distributed the study sample randomly into two groups:

- Control group with (10) Science students and (70) Arts students.
- Experimental group with (12) Science and (68) Arts students.

Before teaching the text. The two teachers of the subject carried out an achievement pre-test, and the attitudes questionnaire was distributed between the two study groups (experimental and control) then it was collection and handed over to the researchers. The research methodology teacher taught the text for the control group. The Science and Arts experimental group studied the text by using the computer lab at their school under the supervision of male or female research methodology teacher who

taught the control group. After wards, the achievement test was applied and the attitudes questionnaire was then fed the pre-post questionnaire items into Excel system in order to obtain the mean. The highest mean value was designated for item (4). The other items which refer to negative attitude towards using the computer namely (3, 14, 24, 26, 28, 30,32, 38, 39, 40) were statistically reversed that the value of "strongly agree" was I mark, don't agree 3 marks, and strongly disagree was 4. The data were analyzed and were statistically treated by using SPSS program after inserting them into the computer. The research finally arrived at the findings and the related recommendations.

Table 2. Study Sample Performance on pre-post achievement test according to teaching method and major.

Group	Major	No.	Pre-achievement test		Post-achievement test	
			Mean	Standard Deviation	Mean	Standard Deviation
Control Group	Science	18				
	arts	12				
	Total	30				

Table 3. Study Sample Performance on Pre-Post achievement test

Group	Major	No.	Pre-achievement test		Post-achievement test	
			Mean	Standard Deviation	Mean	Standard Deviation
Control Group	Science	10	24.2		80.1	
	Arts	70	23.3		76.0	
	Total	80	23.4		77.4	
Experimental Group	Science	12	23.9		85.8	
	Arts	68	21.2		76.8	
	Total	80	22.0		82.0	
Total	Science	22	23.0		84.1	
	Arts	138	19.5		76.2	
	Total	160	21.4		79.7	

Table 4. Ancova Analysis Study Sample Performance on Students' Post Achievement Test

Theme	Total seq.	Mean seq	F	A
Teaching method	487.08	487.08	18.67	0.00
Major	176.9	17609	6.91	0.03
Total	11288.90	191.88		

Table 5. Study Sample Performance on students' attitudes towards the computer can be attributed to teaching method and major

Group	Major	Number	Pre-achievement test		Post-achievement test	
			Mean	Standard Deviation	Mean	Standard Deviation
Control Group	Science	10	2.56		2.68	
	Arts	70	2.98		2.77	
	Total	80	2.79		2.80	
Experimental Group	Science	12	2.62		2.95	
	Arts	68	2.93		2.99	
	Total	80	2.77		2.84	

Total	Science	22	2.59	3.0
	Arts	138	2.96	2.89
	Total	160	2.75	2.89

Table (6) ANOVA analysis Study Sample Performance on Students' Post Achievement Test

	Total seq.	Mean seq.	F	A
Instruction Method	1.08	0.08	23.02	0.00
Major	0.08	0.08	1.54	0.27
Total	4.92	0.079		

10. Finding

This Study aimed at identifying the effect of both teaching method and major on the achievement of tenth-grade students in statistic and their attitudes towards the computer. To answer these points and to test the study's hypotheses, finding of the sample performance been shown on tables.

10.1. Achievement

The Table 2 shows the statistical mean and standard deviations of the sample performance (control and experimental) of pre-ad post achievement test according to instruction method and sex. The Table 2 show a variable between the total mean of the achievement pre-test of the control group (22.4) and the experimental group (21.0) and in favors of the control with a variable at (1.4), i.e. The control's performance was better than the experimental. It also shows a variable in the total statistical mean for the male achievement pre-test (24.2) and for the female (18.5) at a variable of (5.7) in favors of the males. These variables have been statistically checked by using (ANCOVA). Table (2) also shows a variable between the total statistical mean of the achievement post-test of the control group (78.2) and the experimental (81.9) in favors of the experimental group with a variable at (3.7), i.e. The experimenter's performance was better than of the control group. There is also a variable in the total mean of the achievement post-test of the males (83.7) and of the females (74.5) with a variable of (9.2) in favor of the males. As shown on table (3), data of post achievement test to were analyzed using (ANCOVA) to see if the variable in the mean were of statistical significance at (0.05). There are no statistically significant variables ($\alpha=0.05$) in college students' achievement in research methodology attributed to student major.

10.1.1. First hypothesis findings

There are no statistically significant variable ($\alpha=0.05$) in students college achievement in research methodology which can be attributed to teaching

method (control and experimental) ANCOVA finding (table 3) of the sample performance on post-test achievement show a statistically significant variable $\alpha = 0.05$ in students' achievement in research methodology between the control group the experimental group and in favor of the experimental group (See Table 2) and the Table 5 shows the following findings:

10.1.2. Second hypothesis finding

There are no statistically significant variables at $\alpha = 0.05$ in students' attitudes towards using the computer that can be attributed to instruction method. Analysis shows a statistically significant variable towards the computer between the mean of the control group and the experimental group in favor of the experimental group mean at (3.03) where the mean for the control group is 2.89.

11. Discussion study findings

There are no statistically significant variable in students' achievement in research methodology that can be attributed to instruction method. ANCOVA results show that there are statistically significant variables ($\alpha = 0.05$) in students' achievement in research methodology that can be attributed to instruction method, where by the total statistical mean of the experimental group was (81.9) on the achievement post-test, while that of the control group was (78.2). This indicates that CAL in vectors was effective in increasing the students' achievement in research methodology computer with the traditional method. These variables can be attributed to:

- CAL is based on the interaction between the learner and the computer, it adapts itself with the students scientific level in a manner that enables the student to learn according to his/her speed of comprehension and to correct his/her mistakes without being ashamed of. It allows the student to review many times the computerized subject without feeling any embarrassment or boredom. Furthermore, this method consolidates and encourages the student for the correct answer. All these increase students' inactivation towards learning which leads to increase their scientific achievement.
- CAL method combines the abstract knowledge and the concert scientific application. It helps students to imagine the three dimensions (space), motion pictures and sounds it provides. These have an effective impact on students' learning more than what the written word can give. It also enables students to manipulate the statistical knowledge in all walks of life and deepens these concepts in the students' minds.
- CAL helps students to acquire the skill of drawing and designing geometrical shapes. It also

provides students with fun and enjoyment. (Al. Far, 1994).

- CAL is flexible students can move from one component to another easily and according to their wish. This facilitates the learning process and eventually leads to a better achievement.
- CAL minimizes time required to learn how to use the computer in comparison with the traditional method. The findings of this study have been in compatible with the Arabic and foreign studies which dealt with the effect of CAL on students' achievement (see for example, Andrew [2], Szabo and Poogkay [16], Baker and Hale [3], Judson [8], Macoy [11], Jeanetter [7], and Abu-Younis [1]). These studies can be attributed to instruction method. The total mean of the experimental group on pre-test attitudes scale was (2.74) and the post-test increased into (3.03) while the total mean of the control group was (2.73) and (2.74) respectively. The researcher attributed this positive variable in the mean of the experimental group to the fact that the experimental group teaching method by using the computer in teaching vectors provide the opportunity for the experimental group to be acquainted with the pros and con of the computer and its significance in learning and teaching research methodology. Besides, the enjoyment and the fun felt by the experimental group led to bring about positive attitudes towards the computer. In control, the control group's attitudes never changed before or after the study because they were not subjected to study are compatible with the finding of the following studies ([7], [1], [9], [16], [19]), while they did not agree with the Rindings of Watkins's [19], which showed no effect of instruction method on students' attitudes towards using the computer in instruction.

ANCOVA findings of students performance on post-test achievement showed no statistically significant variables at $\alpha = 0.05$ that can be attributed to the interaction between major and instruction method. The research attribute result to the equal chance this study has provided for both sexes. Students were exposed to the same condition, and the instruction methods cared about developing their skills and various capabilities irrespective of their major. The findings of this study are compatible with the finding of Kirkpatrick and Cuban's [9], but they did agree with same studies such as Shashaani's [15], which showed statistically significant variables in students' achievement in research methodology that can be attributed to the interaction between major and instruction method.

The researcher attributed this result to the fact that both major were equal in their skills and capabilities in using the computer. They were also given an equal opportunity in using the computer, besides the equal experience they were provided.

They were exposed to the sure conditions and the changes which echoed the purpose of the study. All this resulted in the absence of statistically significant variable in students' attitudes towards using the computer that can be attributed to major. These findings go in harmony with the findings of other studies (Kirkpatrick and Cuban [9]). But they are contrary to other findings (Ogletree and Williams [13], Shashaani [15], Abu-Younis [1]), which showed statistically significant variables in students' attitudes towards using the computer that can be attributed to major.

12. Recommendations

The study has arrived at the following recommendations:

- More studies should be carried out on CAL and for various level studies.
- Computerized instructional programs should be provided for subjects of statistic and for all stages.
- Students should be encouraged and trained on how to use the instructional computer.

However, students should be allowed to have access to computer and given enough time to practice.

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Creative Literacy and Digital Opportunity

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Abstract

Intuitive and creative development begins as a process in infancy and is seen by many childhood theorists as being essential to the development of literacy and numeracy skills as the child progresses through education. The environment that humans inhabit and that children live within to gain the experiences required to develop and grow, is revealed through analogue wavelengths to the human senses. It is important that the source of stimuli for the child is an analogue source. The analogue waves bring colour, shape, texture, smell etc to the growing child, hopefully in a caring environment that assists but doesn't control the child's experiences. This naïve experience needs to be preserved through education. Digital technology, although highly motivating, can be seen as a tool for progress, but as an adjunct, not a replacement, for the analogue experience. Such a combination of the two creates digital opportunity.

1. Introduction

Each person born has the capacity for a greater awareness of the world in which they live. Each person has a capacity to contribute to a society as a creative and inventive individual. The child sees responses to analogue stimuli as a contribution to its world but this natural urge has a tendency to wane in our society as the child grows.

The capacity for a person to operate as a literate being significantly emerges from the experiences and opportunities available during infancy. One of the outward manifestations of these experiences can be seen in the seemingly meaningless drawn strokes and ill formed circles that emerge during childhood. These symbolic notations are an outward sign of a growing inner awareness. Human invention, creativity and interaction have a foundation based on this developmental phenomenon.

Digital technology creates a contrast to the analogue world experience in its most basic form. Human experiences, being from an analogue environment, essentially provide different experiences from what is revealed on a digital screen and in virtual worlds. Care needs to be taken in the creation and dissemination of literacy and numeracy programs that a digitally based understanding does not become the only reference point. As an outcome

for learning, a purely digitally created learning environment is sure to motivate students. With the burden of an analogue experience taken away, the unadulterated digital experience leaves a result that looks fine as an outcome. What is gained, however, as far as the development of the imagination and therefore potential for the analogue based human, is often questionable. If the current collective understanding of what it means to be human is to be maintained, then the analogue based experience needs to be pre-eminent in any learning environment. Even the industrial era of last century, which saw the establishment of compulsory education, did at least make token gestures to the process of arts based schooling, even if there was no consistent essential place for the arts in the industrial quest for success. If the world of the 21st Century requires the advancement in education of creativity and inventiveness, the curriculum needs to address the balance between the analogue and the digital.

2. Literature review

Kathy Danko-McGhee and Rusian Slutsky (2007) state that being literate in the arts gives young children an advantage in learning to read and write. The overriding premise is that children best learn through multi sensory experiences. Language can no longer be viewed as being just oral and written. For children in any culture to develop as writers, they need time to kinesthetically experience scribbling, which builds the foundation to form lines associated with letter formation. Eisner (1975) talks about the benefits within the arts of creating, viewing and discussing. He states that the visual arts possess a broad spectrum of literacy skills that amplifies knowledge and understanding. Art based experiences expand vocabulary, comprehension and critical thinking. Arnheim (1974) states that we have neglected the gift of comprehending things through our senses and our eyes have been reduced to instruments with which to identify and measure. Kellogg (1970) is more specific in her research about infant and child development through drawing. She is more concerned about the universal aspects of children's art. The circles and strokes drawn by a child combine to form the significant shape of a Mandala. Kellogg states that Mandalas are a key part of the sequence that leads from abstract work to pictorials.

3. Contribution to Knowledge

Creativity and inventiveness as a human process rely on the opportunity to develop natural benchmark signs that point to an inner developmental process, often commensurate with personal capacity, as symbolic forms, circles and strokes form images that represent a child's contribution to community. Abstract shapes that become the basis of formal written language develop as a consequence, usually under the guidance of tutors and teachers. Numbers also form to enable the formal expression of concepts in numeracy. Each symbol, made initially using strokes, then circles, will change as the child grows and finds more intricate ways to represent its world. When drawing, a child uses the visual elements of line, tone, texture etc. to record and express responses to experience. An imaginative world becomes chaptered through the expression of outward design and the subtleties of observation and play are thus externalized for communication purposes. Through experience, the child learns discernment, develops sensibilities, receives and evaluates responses and forms a sense of the aesthetic and the moral. During this time, the child is developing an imagination. The child is able to reorder an environment, developing imaginative worlds where it can live, and create identities that are outside its own limitations. Broader sensual experiences of sound, touch, smell, taste as well as sight come into play and the jottings that occur can represent untapped sources for stories and further interaction with environment. Privileged adults often tap into this phenomenon. Having been through the described experiences themselves, they write stories for children. This practice often fascinates participating children as it reinforces and legitimizes their experiences. It is interesting to note that authors often include adults as the intended audience. The source material for these stories is often forgotten or not experienced by adults in their early years and can only be experienced in an environment that is other than infantile. A light may be turned on in a person from some distant shore, but a systemic dependence can become the secure basis for understanding, rather than a confidence in the developing self progressing in an environment that reflects a suitably naive perception. In a similar way, many school students undertaking a "Photoshop" experience can quickly develop a fascination that involves the communal expression of the "cool" with the use of plug ins and effects creating a sea of clichés, rather than this medium becoming a way of intentionally expressing or formalizing ideas or concepts that come from a time in the evolution of a body of work. The creation and expression of ideas and concepts is a difficult proposition for those who have little intuitive sense to undertake this process. In fact these students often unwittingly involve themselves in a learning environment that reflects

infant and childhood approaches in an attempt to comply with an expected code of conduct and this kind of engagement by students often ceases or moves to other social domains for stylized expression. Usually a minority of privileged students is destined to succeed in an arts based learning environment. Rigors of a strict pathway to employment scheme and the like eventually draw students away from fruitful self-fulfillment that in turn is defined as an unproductive pursuit. In a social setting still driven by the production and sale of goods and services the human aspirations of the individual are once again devalued. The ability to reorder environments and develop imaginary worlds is left to the domain of chemical substances or packaged and handed out in the form of templates in a commercial or virtual world.

4. Conclusion

There is much potential for each citizen of a country to be included and take part in the digital environment, but meaningful participation in society requires a literate, creative and inventive involvement. The capacity for human advancement is inherent in each individual. There is a real need to develop support mechanisms to allow optimum conditions for infant and childhood growth that is not based around the requirements of older systems, built around the creation of wealth, that make no allowance for the patience required to attend to the needs of human individuality.

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Extending Mobile Services for Agricultural Content Delivery in Rural India

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Abstract

Agriculture forms the backbone of Indian economy and a major portion of the country's population is involved in agriculture. Most of India's agriculture industry is located in rural areas. There are a lot of useful agricultural knowledge resources on the internet and it is important for progress of the Indian agriculture industry that the agricultural knowledge content on the web is made available to agriculturists in rural areas. However, in the present situation, the internet knowledge resources are not accessible to the farmers in rural areas due to lack of technology or bandwidth limitations. In this paper, we discuss an innovative solution for the delivery and generation of agricultural content in the present rural Indian scenario which does not rely on network connectivity.

1. Introduction

India is a land of agriculture. Agriculture has a long history in India dating back to ten thousand years. India ranks second worldwide in farm output and agriculture forms the largest economic sector in India. Over 60% of India's population (700 million people) is involved in the agriculture industry which is almost completely located in the rural parts of the country [1]. To discuss better agriculture practices and to spread knowledge of existing techniques, many quality agricultural knowledge resources have been created on the internet, which are maintained by an alliance of libraries and organizations. There are several portals, databases, libraries, encyclopedias, blogs and forums on the internet aimed at creating awareness about the latest and best agriculture techniques among agriculturists. Since agriculture plays a significant role in the overall socio-economic development of India, it is important that the valuable agricultural knowledge resources are made available to farmers in the villages.

Desktop PCs are still not a common sight in rural India, but in the recent times, there has been a phenomenal increase in the number of mobile phone users in rural India. Considering the large rural

population, m-Learning (and very soon, e-Learning) has a lot of potential as a learning tool in

India. Unfortunately, in the present situation, even with the increasing availability of mobile phones and computers, all the agricultural knowledge resources on the web are unreachable from rural India due to low or no bandwidth in most rural parts of India. Less than 40 per cent of the country's total area is covered by mobile networks [2]. Furthermore, a majority of the mobile phones sold in the rural Indian market fall into the low-cost category and offer only basic features that primarily support voice services. Thus, there is a constraint on the usage of these low-end mobile devices for the purpose of content delivery. For delivery of agricultural content and to make m-Learning possible for the rural Indian population in the present scenario, the adopted solution would require the following characteristics:

- **Bandwidth independent:** Today, most of rural India suffers from lack of network connectivity. Although research is being carried to explore reliable and cost-effective wireless broadband solutions, but there is still some time before these technologies can be made available for the rural Indian masses. In order to ensure agricultural content delivery from the internet to users in rural areas and vice versa, a bandwidth independent solution is required.
- **Inexpensive:** All of India's agriculture industry is located in rural areas and the number of villages in India is very large. To ensure feasibility in implementation of the mobile learning solution, the adopted technique must be inexpensive and cost-effective.
- **A large portion of India's rural population is still illiterate.** Hence, the technique adopted for content delivery must ensure that agricultural knowledge content from the internet is delivered to the farmers in rural areas rather than them having to retrieve it themselves. Further, there must be a way to gather user generated content from the rural areas.

2. Content Carriers

Given the bandwidth limitations in rural India, we propose a workflow model for content delivery and generation in which intermediate “content carriers” are introduced between the farmers in the rural regions and the agricultural knowledge resources on the internet, which would “carry” the knowledge resources to farmers in the villages. There are agriculture agencies in all the districts of India which look after all the agriculture modalities of their particular district. We set up a Content Management System containing the agricultural knowledge resources on a computationally capable and inexpensive mobile device. The portable device loaded with the agricultural knowledge resources is then handed over to the agriculture agency in the district. This device is then “carried” by volunteers from the agriculture agency to farmers in rural areas where content is delivered and generated offline using the device. The agriculture agency volunteers travel to the villages in their district and help farmers in the villages to browse through agricultural content on the “carrier” device and content can be edited offline by taking the farmers’ inputs. The edited content is later updated on the main server by the Content Management System when the device is connected using a high bandwidth connection at the agriculture agency. Thus, using the above model, agricultural content can be “carried” to rural areas in an inexpensive manner without depending on the network bandwidth.

3. Implementation

A. Selection of Mobile Device and Content Repository

In our implementation, we considered many smartphones and laptops for the choice of the mobile “content carrier” device. Among the many available options in the market, the *iPod Touch* has a light-weight, sleek, big screen design, is pocket-size small, has an intuitive touch interface, and features providing computational capability such as *Wi-Fi* and a *mobile Safari web browser*, and its latest version has been launched at an affordable price. We, thus, chose the iPod Touch as the “content carrier” device for our implementation.

In January 2009, *Agropedia*, an agricultural knowledge repository, was launched as a collaboration project by a team of seven consortium partners (ICRISAT, IIT Kanpur, IIT Bombay, GBPUAT Pantnagar, UAS Dharwad, IIITM Kerala and NAARM Hyderabad). *Agropedia* is a rich audiovisual encyclopedia in multiple languages, containing all kinds of information and pedagogic or practical knowledge related to Indian agriculture. Using *agropedia*, users can conveniently contribute towards „janagyan“ (emergent knowledge) through

participation in interaction spaces like *agrowiki*, *agro-blog*, *agro-forum* and *agro-chat* and specialists can contribute towards „*gyan dhaara*“ (certified content) [3]. We decided to put the agriculture knowledge resources on *Agropedia* on the computationally capable mobile platform of the iPod Touch. The agricultural content on this device will then be “carried” by the agriculture agency volunteers to nearby rural areas.

B. Installing the Content Management System

Agropedia is built on *Drupal* using *PHP* and *MySQL*. It is hosted on an *Apache* web server. The installation of *Agropedia* on iPod Touch involved the following steps:

- Apache HTTP server (Version 1.3.37) was set up on the iPod Touch to host the *agropedia* website.
- PHP (Version 5.2.3) was installed on the iPod.
- MySQL Database (Version 5.0.45) was installed on the device.
- Drupal Content Management System (Version 6.6) was installed on the device to create the necessary platform for running *Agropedia* on the iPod Touch.
- Finally, the *Agropedia* code was loaded on the iPod and its performance was tested.

C. Testing

The performance and compatibility of *Agropedia* on the mobile Mac OS platform of the iPod Touch was tested. Most *agropedia* features ported flawlessly on the iPod Touch and their loading time on the device was found to be comparable to their loading time on a desktop PC. Thus, the “content carrier” iPod Touch was loaded with a Content Management System containing *Agropedia* content and it could be carried to farmers in rural areas by volunteers. Using the Drupal Content Management System on the “carrier” iPod Touch, farmers in rural regions would be able to browse and create offline content with the help of volunteers which would later be updated on the web. The “content carrier” device is updated with the latest *Agropedia* version every time before it is carried to the farmers. Figure 1 below explains the working of the proposed workflow model.

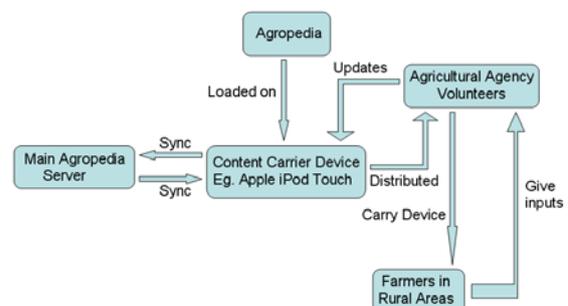


Figure 1. Working of the proposed workflow model

4. Conclusion

In this paper we discuss the idea and implementation of an innovative workflow model for the delivery of agricultural content in a rural Indian scenario which does not depend on bandwidth. The proposed solution would bridge the gap between farmers in rural India and agricultural knowledge resources on the web, thereby, helping the farmers learn new 3 agriculture practices, share their valuable experiences and thus, helping in the growth of the Indian agriculture industry.

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Flexible E-Assessment for Accommodating Diverse Learning Styles

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Abstract

Individual learners have broad range of preferences for the way they assimilate information, for example, visual, auditory, or kinesthetic learners in terms of preferred media; verbal/linguistic or logical/mathematical in terms of thinking patterns. If assimilation of information is best achieved in a particular way, then achievement in assessments may also be dependant on how questions or tasks are set, and how learners are required to present material for assessment. In this paper, we propose accommodation of the different learning styles in flexible e-Assessment.

1. Introduction

There are various factors which affect students learning and achievement. These include motivation, interest in subject, and also learning styles. 'Learning styles' has become the byword in the recent drive to push up education standards [1] and is cited in the Governments DfES Standards documentation. Research on learning styles identifies a broad range of preferences that individual learners have for the way they assimilate information and the implications of those preferences for planning teaching, learning and assessment.

The traditional method of using learning styles in developing learning is the matching approach [2]. In essence, the use of any learning style approach or model with mixed learners is to ensure that a programme of study meets, or attempts to meet the preferences of all learners, although in any given class some preferences may not be met. Dunn and Griggs, [3] assert that the "closer the congruence between students learning style and their teachers teaching styles", the higher the level of achievement. The extent of learning achieved can be realised through assessment. Therefore, it can also be asserted that developing assessments to cater for the diversity

of learning styles can help students achieve high performance.

2. Learning styles and multiple intelligence

Assimilation of information during the learning process depends on the students' different learning styles. Some learn better by looking at material while others learn quicker by doing.

2.1 What are Learning Styles and Multiple Intelligences?

James and Gardner [4] define learning styles as the complex manners in which, and conditions under which, learners most efficiently and most effectively perceive, process, store, and recall what they are attempting to learn. Stewart and Felicetti [5] define learning styles as those "educational conditions under which a student is most likely to learn." Multiple intelligence is a theory that was proposed by Gardner [6] in an attempt to accurately define intelligence thereby categorising learning styles.

There are many approaches of categorising learning styles in different domains. These include field dependent vs. field independent the cognitive domain, visual, auditory, tactile, kinaesthetic in the perceptual domain, left brain vs. right brain dominance in the hemisphericity domain, and global/analytical orientation in the psychology domain, etc.

Field dependence is the tendency to be dependent on the total field so that the parts embedded within the field are not easily perceived, and the total field is perceived most clearly as a unified whole [7]. Conversely, the field independent learner tends to perceive objects as separate from the field (the analytical orientation), and excels in learning which involves analysis, attention to details, and mastering of exercises, drills, and other focused activities.

Visual, auditory, and kinaesthetic learning styles categories of learning styles depend on the preferred media of the learner. Visual information clearly includes pictures, diagrams, charts, plots, animations, and videos, and auditory information includes spoken words and other sounds.

Another way of looking at learning styles is to determine the learner's hemispheric dominance, i.e. is he/she more right-brained or left-brained? The left brain is the seat of language and processes in a logical and sequential order, and the right side is more visual and processes intuitively, holistically, and randomly. [8]

2.2. Assessment of learning styles

Various ways of determining a learner's learning style have been established and they have been adopted in many educational institutions where the impact of learning styles on the learning process has been realised. These are basically in form of questionnaire type questions which are scaled. An individual's learning style is deduced from the score they get. Examples of questions of such a questionnaire can be as follows:

1. I feel the best way to remember something is to picture it in my head.
2. I follow oral directions better than written ones.
3. I often would rather listen to a lecture than read the material in a textbook.

Learners answer the questions against a scale like:

1. Very little like me
2. A little like me
3. Like me
4. A lot like me

3. Learning strategies to accomplish various learning styles

Achievement of learning objectives depends on the learning strategies employed. If students' various learning styles are considered in the learning, teaching and assessment strategies, the learning objectives can be effectively achieved.

3.1. Learning and Teaching strategies

One of the benefits of addressing learning styles is that students can take more responsibility for and have a deeper understanding of their learning. Also, knowledge of learning styles, learning strategies and meta cognition in a broader learning context can give teachers tools to identify the individual traits that effectively impact on achievement and give each learner the opportunity to develop through their

personal strengths [9]. Table 1 shows how teaching and learning strategies can accommodate diverse learning modalities. Varying teaching strategies makes sure that students will occasionally learn in a manner compatible with their own learning preference, but it is necessary for learners to develop alternative learning strategies and thinking skills to prepare them for the tasks that require specific modalities.

Table 1. Teaching and learning strategies for various perceptual learning styles

Visual learner	<ul style="list-style-type: none"> Draw a map of events, diagrams, and figures Make outlines Copy what's on the board Take notes, make lists Watch videos Colour code words and research notes Outline reading Use flash cards Use highlighters, circle words or underline
Auditory (verbal) learner	<ul style="list-style-type: none"> Using word association to remember facts and lines Recording lectures Watching videos Repeating facts with eyes closed Participating in group discussions Using audiotapes, taping notes after writing
Kinesthetic learner	<ul style="list-style-type: none"> Studying in short blocks Taking lab classes Role playing Taking field trips, visiting museums Studying with others Using memory games Using flash cards to memorize Using short definitions, fill-ins & multiple choice in tests

3.2. Assessment strategies

Assessments methods emanate from the specific learning objectives of a subject, hence assessment should be included in the planning of teaching and learning. Assessments can be designed as an ongoing process (formative) or

they can be designed to be used at the end of a prescribed period of learning (summative). Varying assessment strategies will also ensure accommodation of the different learning styles. Classroom presentation naturally suits verbal/linguistic learners as it requires students to verbalise their knowledge. Visual learners are likely to achieve higher in assessments which include pictures, videos, diagrams, maps, etc as those will help them figure out responses. Assessments involving analysis or problem solving will benefit logical/mathematical learners whereas kinaesthetic learners will do well in fill-ins and multiple choice questions.

4. Flexible E-Assessment

The growth of technology is evident in the field of education. Assessment is gradually moving from pen and paper to e-assessment.

4.1. E-Assessment

E-Assessment is one of the domains of e-learning. It refers to assessment which is electronically delivered. The Joint Information Systems Committee (JISC) defines e-assessment as the end-to-end electronic assessment processes where Information and Communication Technology (ICT) is used for the presentation of assessment activity, and the recording of responses [10]. Figure 1 shows the different categories of assessment [11].

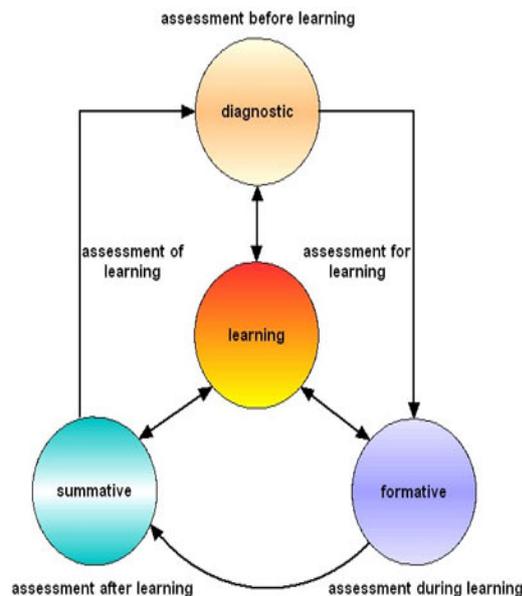


Figure 1. Categories of assessment

In the education field, any type of assessment is related to learning. It can be done prior to provision of learning to determine what is already

known by a student. Formative assessment checks how much has been assimilated during the learning process whereas summative assessment, which comes after the learning process, tests to see if learning objectives have been achieved.

4.2 How the learning styles impact on the design of assessment?

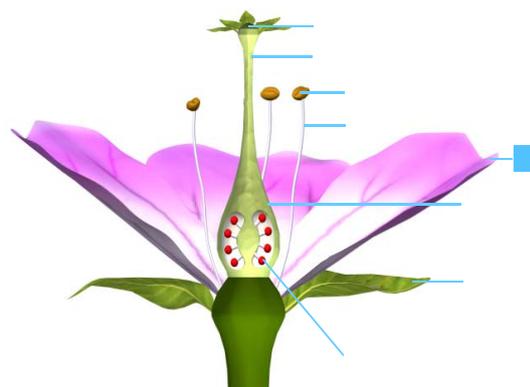
Once the different learning styles of learners are identified using a diagnostic questionnaire, assessments can be designed in such a way as to accommodate that diversity. The different question types render themselves suitable for that purpose. These include multiple choice, text entry and gap filling, drag and drop as well as graph questions. E-assessment systems can accommodate these question types and hence the systems can be designed in such a way that learners can be assessed on the same skill or objective but using different assessment question types as demonstrated in the case study.

4.3 A case study

A couple of questions are presented here in the different ways they could be set to accommodate the diverse learning styles. They are taken from old assessments in Biology of Organisms and Data Analysis.

Question type 1:- Text Entry

The diagram below represents the longitudinal section of a flower. Identify the features highlighted.



In this case students enter the text to identify the highlighted features.

Question type 2:- Drag and drop

Move the given labels to the correct positions to identify the highlighted features of the flower.

Labels:

Anther	Style	Receptacle	Sepal
Stigma	Ovary	Filament	Petal
Ovule			

In this question type, students are given the answers but they need to remember the correct positions to place them on the diagram.

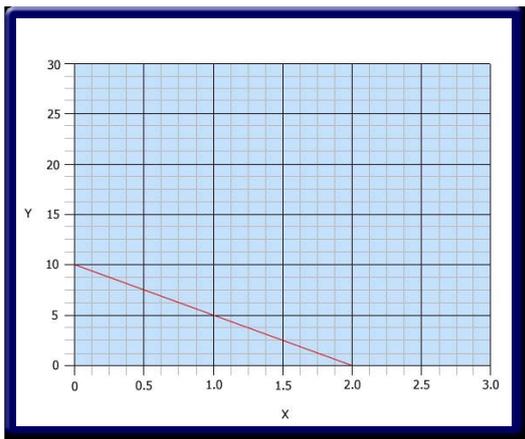
Question type 3:- Unguided Text Entry (without the picture)

List the nine major parts of a flower.

Question type 1:- Multiple choice

Which of the following is represented in the graph below?

- a. $x = 2 - 1/5y$
- b. $y = 2 - 1/2x$
- c. $y - 2 = 1/2x$
- d. $y = 10 + 5x$



Question type 2:- Sketch

Draw a line on the graph to represent $X = 2 - 1/5y$

Visual learners are likely to do well in the sketching question, and in the multiple choice question, the given graph may help them work out and select its correct representation.

5. Conclusions and Future Work

The versatility of e-assessment systems makes it possible to accommodate the different learning styles in assessments. This provides a flexible strategy to assessment leaving the learners in charge of their achievements. While it may not be possible to accommodate every learning style in

any given assessment, the variety of question types, makes it possible to cover a wide range.

For future work, we plan to design a flexible e-assessment system prototype to demonstrate the notions introduced in this paper. The system will be designed using Design Methodology Management (DMM) technology which deals with the execution and control of tools used in the design process.

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Session 7C: ICT Education, E-Learning and Distance Education

The Impact of Transformational Leadership on Students' Professional Learning in Distance Education towards Reflective Practice
(Uzma Murad Panhwar, Syed Abdul Aziz, Muhammad Fawad Panhwar)

A Study of Students Problems and Prospects Regarding Teacher Education through Distance Learning in Pakistan (Qadir Bukhsh)

Effects of Using the Default LISREL Parameter Estimation Method with Ordinal and Non – Multivariate Normal Data (Diana Mîndrilă)

Interactive Graphic Organizers: A case of ICT curriculum integration in higher education
(Mario J. López, Héctor R. Ponce, Rodrigo G. Quezada)

The Impact of Transformational Leadership on Students' Professional Learning In Distance Education towards Reflective Practice

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Abstract

This research study is a descriptive analysis of impact of transformational leadership on learning and teaching in distance education towards reflective practices. The objectives will be achieved by administrating questionnaires containing impact of transformational leadership practices, concept of teaching and learning, distance teaching and learning process, concept and significance of reflective practices, reflective practice in distance education, problems and issues involved in it. The present study will provide guide lines to teachers of distance education in sindh and Center Supervisors to bring self-awareness in the learners. The head of departments will organize distance education programs at all levels. The curriculum developers can design the courses on leadership practice and reflective practices for teacher's development. Data will be collected through questionnaires designed for targeted population. After the processing of data, on the basis of findings, the suggestions and recommendations will be made.

1. Introduction

In the present stage of struggle for progress and advancement, the formal way of education has not provided of much help in eradicating illiteracy on a wider scale. It is required to develop such an effective system in which learners don't have to go far away to get education and secondly, it should be financially affordable for the students. Highlights the need of non-formal education [1]. This can be adopted to acquire national needs both in methodology and its content. The non-formal education is an organized system and many modes are included in it namely; correspondence study, self-study, external study.

The term distance education falls under the umbrella of non-formal education, the term distance education is used to describe various forms of study at basic as well as higher education and training to their masses, they have no facilities and cannot leave their homes and jobs for full time studies.

Teaching is a dynamic and well planned process. Its objective is to acquire maximum learning

experiences and make the process of learning impressive. "Teaching is a social and professional activity", it is a process of development. Teaching is a system of action which induces learning through interpersonal relationship" [2].

It is essential to establish the relationship between teaching and learning. In distance education system students remain the most important person. Everybody makes efforts in making the learning process easier and comfortable. For this teaching and learning process at a distance requires special knowledge, skill and experiences are prerequisites for professional growth of an individual. When one in this practice it will lead to the improvement of the whole process. "Reflection practice is viewed as a means by which practitioners can develop a great level of self-awareness about the nature and impact of their performance, an awareness growth" [3] the question of what makes a good teacher? This has come again to the forefront of academic discussion nowadays. The answer of that question is "leadership qualities". In recent years research about human development has been integrated into view about leadership, first in corporations and business and more recently in educational settings.

Transformational leaders are self aware, collaboration, visionary and effective at problem solving. They tend to hold the belief that groups working cooperatively can achieve greater results.

In addressing the issue of training educators to improve their performance, attention of this study is centered on professional development as a self-directed, rather than on externally prescription. To enhance performance, one must be self-aware as well as from personal, practical knowledge and world view. In distance learning system for teachers training programs face to face teaching is must. Teaching and learning process at a distance requires special knowledge, a skill, personal attributes and leadership experiences are prerequisite for professional growth. For availing the concept of reflective practice in the process of teaching and learning in distance education, it is necessary to create an understanding of the concept keeping in view the research had been chosen.

2. Background

The usefulness of distance education can be considered in the light of Bloom's taxonomy of study objectives. In the cognitive domain, the effectiveness of distance education is rarely challenged.

The origin of non-formal and distance education lies basically in the philosophy that a society has a responsibility to provide educational opportunities to those who for some reasons or other cannot get benefit from the formal or traditional system of education.

To provide education on mass scale is a never ending challenge to every decent society on map of the world. The population explosion has made it impossible to improve education through the existing formal system of education.

The more advanced countries realized the needs to explore new avenues to discover innovation and alternative approaches to educate the people in order to make their citizens more productive and useful. This resulted positively in the development of the concepts of "learning society" and "lifelong education". The advanced countries of the world during the sixties and seventies of the closing century established departments of Non-Formal in the existing general and technical universities.

Realizing the magnitude, complexity and pressure of the problems, more and more countries have led their way to Distance and Off-Campus Education system as a solution and have mostly met with considerable success.

"This method/system provides education, courses by correspondence, broadcasting and occasional face-to-face learning" [4].

Non-Formal Education in Pakistan was introduced in 1974 with the establishment of an Open University (Allama Iqbal Open University) under the parliament act of XXX.

Taking an advantage of experience of AIU, Sindh University was the first general university in Pakistan, which on April 23rd 1990 established a Non-Formal and Distance Educational Chair (NFDEC) in order to meet the needs of the rural population and backward areas of the Province.

In 1995-96 Non-Formal and Distance Education Chair (NFDEC) started its first programme and offered B.Ed. Off-Campus to train Secondary School Teachers particularly belonging to the remote areas of Sindh.

This was successful experiment and about 4000 students were enrolled in the very first year. In the year 1998-99 M.Ed. Programme was also started.

In 2003 Non-Formal and Distance Education Chair was recognized as Non-Formal and Distance Education Centre that felt a need for recognition of the Faculty of education to ensure its smooth running

and discharging obligation of imparting quality education for professional degrees such as B.Ed. and M.Ed.

3. Statement of the problem

Reflective practice encompasses the linkages between theory and practice. The successful implementation of both, results into effective teaching and learning process, with the current educational reform initiatives and entries accountability. There is a need to investigate, what is in practice, in teaching and learning process and to expand the research in the supervisor and teachers (Tentors in this study) role in developing and sustaining professional learning communities.

Furthermore this study examines:

- The leadership styles of Center Supervisors and transformational leadership styles of Teachers.
- The contextual factors that influence teacher's professional learning.

Research is designed in this regard; it is entitled as "the impact of transformational leadership on professional learning in distance education towards reflective practice".

4. Objectives of the Study

The following are the objectives of the study

- To discuss the concept of distance education.
- To examine the impact of transformational leadership on professional development.
- To find out the role of learning and teaching towards reflective practices.
- To identify the problems involved in reflective practices in teaching and learning at a distance.

5. Purpose

The purpose of this study is to investigate teachers' reflective perceptions on examining the use of transformational leadership practice for professional development. Professionals' development is considered on essential mechanism for deepening teachers' content knowledge and developing their practices.

The general purpose of this study is to discuss the concept of distance education especially in Sindh province and to see the impact of transformational leadership practices on professional learning in distance education.

This study is to identify the problems involved in reflective practice in teaching and learning at a

distance and suggest solutions of the problems in at a distance towards reflective practice.

6. Justification

There is an extensive work on education but very little research work on distance education in Sindh province. University of Sindh has established distance education department. This department is to promote teachers training programs and to produce effective teachers for the society. This research on efficient teachers in term of students' achievement but very little that is focused on helping teachers to develop themselves. In order for teachers to be reflective about their practice, there has to be "A feedback loop", a means by which they can consider their work in a critical way, one powerful way in which teachers are encouraged to reflect upon and improve their practice [5]. The targeted population of this study is the teachers and the supervisors of the distance education program of the University of Sindh. So the trainee teachers of B.Ed. and M.Ed. non-formal program will be highly benefited from this study and they will serve in the society as a leader and they will provide professional education in the communities with the professional abilities like self-awareness, self-actualization, reflective practice, emotional intelligence positive behavior with the students and the colleagues.

7. Definition of the Key Terms

Educational leadership: Influence on curriculum, instruction and assessment decisions.

Professional development: A culture of professional inquiry that presumes high level of teaching skills, purposeful interactions, assignments and experiences provided specifically for the growth of educators.

Teachers' reflection: The capacity of the individual teacher to reflect on his or her practice and to put to the test of he practice, specifications of teaching from other sources.

Transformational leadership: This term means leader with the skills for creating collaborative learning environments.

Center Supervisor: The personal appointed by the DDCCE for the Distance Education Centers to look after the study centers in various districts.

8. Methodology

Population: The following was the population of this study. All the students of B.Ed and M.Ed level, all tutors of Hyderabad and center supervisors of faculty of education, University of Sindh.

Sample: 100% population was taken as a sample.

Research instrument: The questionnaire was developed on five-point rating scale for each population, as follows:

Questionnaire for students

Questionnaire for tutors

Questionnaire for centre supervisors

9. Design of the Study

The study was descriptive i.e. survey type in its nature. Questionnaire was used as a tool for collection of data. The data was collected from respondents representing of three populations. First of all, three questionnaires were developed for data collection. Each questionnaire was having fifteen items related to the problem for each population. Keeping in view all the important aspects related to reflective practice in teaching and learning process in distance education i.e. teaching and learning process, innovations in teaching and learning, distance teaching and learning, theories of learning reflective practice, its concepts and significance, reflective practice in Distance Education. Its effectiveness and problems involved in reflective practice.

10. Distance Teaching and Learning

In the perspective of rapid technological changes, demand for the provision of educational opportunities without increased budget is increasing rapidly, Distance Education Programs are being used in many educational institutions of the world for providing educational opportunities without increased budget, at its most basic level, distance education takes place when teacher and students are separate in physical distance and technology (that is voice, video, data and print) often in concert with philosophers, he believed in the basic goodness of human and in their tendencies to move to higher level of functioning as their basic physical needs are met. Maslow described the needs at each level. Every person has the same hierarchy of needs". An organization of psychological self-help mentioned these needs as:

1. Physiological needs
2. Safety needs
3. Belonging and love needs
4. Self-Esteem needs
5. Self-actualization

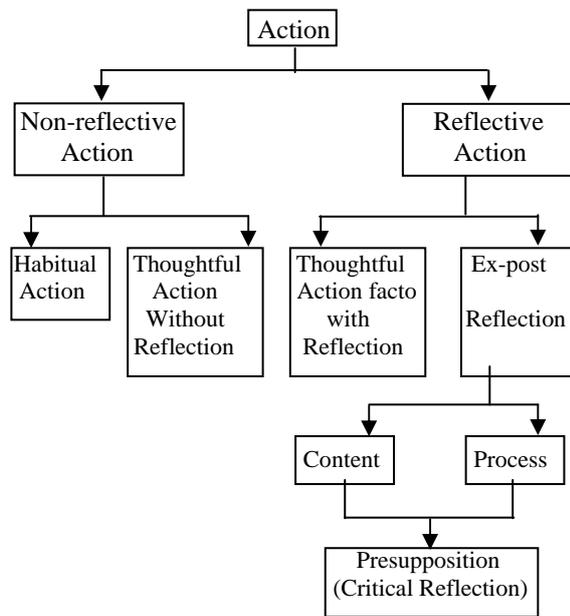
Meziro's Transformational Learning or Critical Reflection Critical reflection has been elevated to

the major objective of adult education in the work of Mezirow.

Perhaps even more central to adult learning than elaborating established meaning schemes is the process of reflecting back on prior learning to determine whether what has been learned is justified under the present circumstances [6]. This is a critical learning process egregiously ignored by learning theorists.

Critically thinking about prior knowledge and justifying it with present circumstances or situation is a process which is being ignored by learning theorist.

Mezirow's Critical Reflection



Source: Atherton, J.s. (2003) Teaching and Learning: Critical Reflection (Online), UK: Available: <http://www.learning and teaching. Info/learning/critical1.htm>. Assessed: February 24, 2005.

According to Mezirow's Critical Reflection maintains that such reflection on assumption and presupposition (particularly about oneself) leads to "transformative learning" [7].

11. Reflective practice: Concept

The main focus of education is to bring about behavioral change in an individual. An individual adopts new ideas, improves his ways of thinking, develops tests and sensitivities, which arrange his attitude, and encourage betterment in other desired ways, which is the essence of reflective practice. "Reflective practice, while often confused with reflection, is neither a solitary nor a relaxed meditative process. To the contrary, reflective practice is a challenging, demanding, and often

trying process that is most successful as a collaborative effort" [8].

These lines show that reflection and reflective practice are often confused together and are meant to have nearly the same meaning which is meditation or thinking, but here is a difference between these two. The word practice gives it a very broad meaning. In fact reflective practice is such a process which aims at behavioural change and is not possible only by applying the old traditional methods of professional development, rather it requires a very practical and comprehensive way of professional development which is only possible with reflective practice which starts from "self awareness" of one's performance, which creates opportunities for professional growth and this self awareness is a kind of learning... we should not rely solely on our natural process of reflecting on experience, but actively seek ways to ensure that reflection itself becomes a habit, ensuring our continuing development as a professional teacher in higher education.

So the professional knowledge is grounded in professional experience competent practitioners usually know more than they can say. "Reflective practice is located within the older tradition of experiential learning and also more recently defined perspectives of situated cognition" [9]. Important figures in experiential learning are Dewey, Lewin, and Piaget. All of them infer that learning is most effective and most likely to lead to behavioural change. People become personally engaged in learning process as a result of experience and learning needs engagement. Proponents of situated cognition maintain that learning is best accomplished through an active, social and authentic learning process. They argue that active involvement in learning process makes it more effective. "Situated learning is the notion of learning knowledge and skills in context that reflect the way the knowledge will be useful in real life". This has in particular an important implication for learning what Laurillard classifies as academic knowledge, so academic knowledge is considered to be different to everyday knowledge, drawing a distinction between learning precepts necessitates student building understanding in a deeper [10].

12. Effectiveness of Reflective Practice in Education and especially in Distance Education:

The notion of capability is a reflective practice model requires students to learn to work effectively with other as well as on their own. Teamwork also tends to enhance self-reflection and awareness of learning process, as individuals are accountable to the group and especially of the group is encouraged to analyze its own successes and weaknesses in accomplishing the set task [11].

Students taking classes at a distance can be taught most effectively by methods which promote optimum student participation which stimulates reflective thinking helps students giving new insights concerning themselves and their worlds.

According to Zahoo, "A structured and supported process undertaken by an individual to reflect upon their own learning, performance and or achievement and to plan for their personal, education and career development" [12]. Reflective practice is such a process which starts from self criticism helpful in planning for personal, educational and career development.

Zahoo explains: as a result reflective practice students [13]:

- Become more effective independent and confident self-directed learners.
- Understand how they are learning and relate their learning to a wider context.
- Improve their general skills for student and career management.
- Articulate their personal goals and evaluate progress towards their achievement.
- Encourage a positive attitude to learning throughout life.

In the reflective practice practitioners engage in a continuous cycle of self-observation and self evaluation in order to understand their own actions and the reactions they prompt in themselves and in learners.

13. Findings

The following findings have been compiled from tutors' questionnaire:

- 91.3% of tutors viewed that distance education is planned learning that requires special instructional and organizational arrangements where as 68.6 % of tutors confirmed to the effectiveness of distance education as teaching and earning process.
- 91.4% tutors recognized that it was important for a tutor to consider students anticipating problems or questions arising in their minds before entering study center, while 82.8% of tutors concurred that tutors should note their tutoring experiences in to a diary while tutoring a course.
- 94.2% of tutors accepted that a tutor has to apply different methods and techniques for educating distance learners in a better way.
- 82.8% of the tutors accepted that lack of training for practitioners was a problem.

- 57.1% of tutors agreed that reflective practice is exhaustive process where as 82% tutors agreed that reflective practice is not restriction in the growth of creativity.

The following findings have been compiled from students' questionnaire:

1. 61.7% of students accept that discussions with tutors solves students problems in learning, where as 49.1% of students differed that self reports help in resolving their problems.
2. 59.6% of students agreed that student has to criticise himself in improvement in learning.
3. 64.9% of students subscribed that lack of time was a hurdle in the way of becoming reflective and fully committed person where as 78.9% students agreed that lack of recourses creates problem in becoming a reflective and fully committed person.
4. 57.9% of students agreed that reflective practice is restriction in the growth of creativity. 52.7% students agreed that lack of training for parishioners was a problem.

The following findings have been compiled from center supervisors' questionnaires:

1. A significant number of center supervisors i.e. 93.8% were of the view that awareness of a person about the nature and impact of his performance was important while 87.5% of center supervisors concurred that professional attitude was necessary in performing a job.
2. 81.25% of center supervisor assented that reflective planning before starting a job or work was necessary while 75% of center supervisors agreed that one should reflect on the problems inherit in his/ her job performance.
3. All center supervisors i.e. 100% agreed that one has to be innovative in performing his/her job.
4. 68.7% of center supervisors agreed that reflective practice is very exhaustive process 11.8% of center supervisors agreed that reflective practice places restriction in the growth of creativity. 87.5% of center supervisors agreed that lack of training for parishioners was a problem.

14. Conclusion

From the above findings the conclusions from the all questionnaires are as under:

The attention of educators has turned to the importance of the leadership in creating of conditions, conducive to effective change. The analysis of effects provides that there was lack of evidence to support leadership and the effects on learners. But it was observed that transformational leaders are collaborative, and they are very much helpful in developing learning environment with the help of tutors. The findings from the students' questionnaire reinforce that there is a need for effective leadership practices fostering of a learning culture, where teachers can continuously struggle for the success of all individuals. Majority of students were of the view that Distance Education was planned learning that requires special instructional and organizational arrangement and confirm the effectiveness of teaching and learning at a distance.

A "new kind of teacher" is necessary to meet the current demands of our dynamic profession. This "new kind of teacher" does not refer to a recent graduate, but to the career teacher that continually reflects and adapts to the needs of the students. It is our responsibility as educational leaders to study professional leadership in an effort to best serve the teacher to maintain an active, effective, and fulfilling teaching career that will provide all students in the country with what should be there educational birthright, access to competent, caring, and qualified teachers. Keeping all that in mind the conclusions from the all questionnaires are as under:

The attention of educators has turned to the importance of the leadership in creating of conditions, conducive to effective change. The analysis of effects provides that there was lack of evidence to support leadership and the effects on learners. But it was observed that transformational leaders are collaborative, and they are very much helpful in developing learning environment with the help of tutors. The findings from the students' questionnaire reinforce that there is a need for effective leadership practices fostering of a learning culture, where teachers can continuously struggle for the success of all individuals. Majority of students were of the view that Distance Education was planned learning that requires special instructional and organizational arrangement and confirm the effectiveness of teaching and learning at a distance.

15. Recommendations

The following were recommendations of the study:

1. Interaction with colleagues and senior persons may resolve problems involved in teaching and learning.
2. Collaborative decision making may help in resolving problems involved in teaching and learning.

3. Considering past experiences may help in resolving problems.
4. Values and assumptions may be examined to bring change and may resolve problems in teaching and learning.

Training of practitioners may be made compulsory.

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A Study of Students Problems and Prospects Regarding Teacher Education through Distance Learning in Pakistan

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Abstract

In Pakistan Distance System of education was started with the establishment of Allama Iqbal Open University (AIOU) in 1974. AIOU as a Distance Learning Institution of Pakistan has many distinctive features i.e. specialized text books, allied material, use of interactive technologies, regional network, satellite transmission, on line learning and broad cost and non- broad cost media for effective learning through Distance Education. The present study was undertaken to highlight the problems faced by the students of the Teacher Education Programmes of Open and Distance Learning institution in Pakistan. The study also measured the effectiveness of the different components of the Open and Distance Learning System such as admission, delivery system, assignments, students supports services, tutorial meetings, technological support, quality of the material, workshop, examination and results. To achieve the desired end all the students of M.A Teacher Education were taken as population of Region Bahawalpur of Allama Iqbal Open University Islamabad, Pakistan. 1250 students were taken as sample of the study. A questionnaire was the data collection tool. Data was analyzed in term of percentage and mean score. The major results of the study were as: (a) Prospectus is not easily available (b) There is defective delivery system for the material (c) tutors do not returned the assignments (d) There are sufficient informations on the web of AIOU.

1. Introduction

Distance Education has the potential and capacity to provide general education and professional education useful for application of latest technology in the new millennium in all sectors of development and face the forces of globalization, deregulation, privatization and fast socio-economic changes through continuous education in latest developments by Goel.A and Goel.L.S [6]. The term open and distance learning represents approaches that focus on opening access to education and training provision, freeing learners from the constraints of the time and place, and offering flexible learning opportunities to individuals and groups of the learners. Distance Education is the form of instruction which is capable of catering for great numbers of students and even

mass audiences. Such a form of the instruction would be impossible without the techniques of industrial mass production and with out the help of mass media and the computer [11]. Distance Education is now international recognized and accepted as an alternative channel for providing broader access to education in a cost effective manner; wider and diversified curricula and a means for continuing life long education [8]. Distance Education has extended to a large extent during the last four decades and due to this expansion, distance education is now considered as a separate discipline [7].

Distance education is the realization of the concept of the globalization. Distance education has capacity to impart education efficiently and effectively for the large masses with the technological support. Distance education has brought an economic revolution in the modern world. Distance Education is open access to every one living in any part of the world. It is the mode of education having flexibility of time and space. Distance education is carried out with the help of media and computers. It is cost effective and fastest growing type of education. Distance education serves the persons living in the for flung areas with inadequate facilities of education as indicated by Rai, [9] "Distance Education an evolving paradigm of instruction and learning that attempt to overcome both the distance and time constraints founded in traditional classroom learning. It is the set of technologies that can allow for a more equitable distribution of resources, as well as a more personalized learning experience." Distance education also serves the dropouts, older students and disadvantaged groups. Distance education provides individualized way of education as highlighted by Ramaiah.R.Y [11]: "Distance Education provides for instruction in which teaching and learning have been secularized to a high degree, as the relation between teacher and student has objectified. The teacher and students do not interact as persons in their totality, but as a special teaching and learning functions which operate only in order to reach the defined goals."

Distance education is the source of promoting higher education round the glob. It provides individualized instruction and provides desired education according to the need of the community. This mode of education has created circumstances of

easy access to education for the students. The significance of the distance education may be accessed with the number of distance institutions and the courses they offered as indicated by Reddy.V.V and S.Manjulika [10]: “Open and distance learning is one of the most important and widely proliferating educational phenomena worldwide. Presently there are more than 1,000 institutions, in as many as 107 countries all over the globe, offering nearly 40,000 courses through open and distance mode.”

2. Distance Education in Pakistan

Distance education was started in Pakistan with the establishment of Allama Iqbal Open University in 1974. Since 1974, AIOU is struggling hard to provide educational facilities to the people of the Nation. University has provided equal opportunities of education to the people of Pakistan living in any part of the country through the use of technology. People living in the rural areas having no or partial facility of education got a new dimension through Distance Learning. AIOU took number of measures to provide quality education through distance learning such as, tutors registration, online student services, and online inquiry, result card and feed back system. AIOU has number of distinctive features as distance learning institution which is given as:

2.1. Textbooks and Material for students

To promote self learning and enhance the understanding of the students, University develops specialized textbooks and reading material. As the student of distance learning study at home, AIOU support the students through the radio and T.V programmes and the high quality audio and video aids which is helpful for the effective learning.

2.2. Information Technology and Distance Education through AIOU

The distance system of education has become effective with the technological development. Now students can access more easily and effectively to the institution. The internet facility replaced the conventional distance education system which was paper based. The solution of the problems of the students in distance learning has become more quick and easy.

2.3. Selection of the tutors from all over the country

Tutors check the assignments of the students and organize workshops in distance learning. To promote quality education, AIOU has registered tutors throughout the country having qualification and

experience required for the programme. At the study center, tutors guide the students and evaluate their assignments. AIOU has strengthened the system with the qualified and experienced tutors.

2.4. Network of Allama Iqbal Open University in Pakistan

The regional network of AIOU is the back bone of the system of distance learning. The regional center/ campus provide feed back, consultation and learning environment with a library. The University presently has 36 regional Campuses and centers in the country. (AIOU, VC Report, 2006-07)

2.5. Teacher Education through Distance Learning in Pakistan

Faculty of Education in Allama Iqbal Open University, Islamabad was established in 1984. It is one of the largest faculties of the university both in terms of number and student enrolment. The faculty offers variety of programs in education and training teachers. These academic programmes range from primary teachers training to M.Phil and Ph.D levels and these programmes have earned distinctions for this university as a faculty of education (see Tables 1 and 2).

Table 1. Departments within the faculty

Adult and Continuing Education	Distance and Non-Formal Education
Educational Planning and Management	Elementary Teacher Education
Science Education	Special Education
Secondary Teacher Education	

Table 2. Programs offered by the faculty of education

PhD

Secondary Teacher Education	Educational Planning & Management
Distance and Non-Formal Education	Special Education

M.Phil

Secondary Teacher Education	Educational Planning & Management
Distance and Non-Formal Education	Special Education

M.A and M.Ed

Secondary Teacher Education	Educational Planning & Management
Distance and Non-Formal Education	Special Education

- B.Ed
- PG Diploma (Educational Planning & Management)
- PG Diploma (Special Education)
- C.T (Certificate of Teaching)
- Diploma (In Education 10+3 Model)
- New PTOC (Primary Teacher Orientation Course)
- SSC Level Courses (Related to the Faculty)
- HSSC Level Courses (Related to the Faculty)
- B.A Level Courses (Related to the Faculty)

3. Objectives of the Study

- To discuss the conceptual framework of open and distance learning system
- To identify the role open and distance learning system in promotion of teacher Education in Pakistan
- To investigate problems faced by M.A (Education)/M.Ed students of AIOU in Region Bahawalpur
- To suggest solution of problems faced by M.A (Education)/M.Ed students of AIOU in Region Bahawalpur

4. Research Methodology

4.1. Sample of the Study

1620 students of M.A (Education) /M.Ed of spring 2007 enrolled in AIOU in Region Bahawalpur was the sample for the study. Region Bahawalpur consisted on four Districts of Southern Punjab i.e. Bahawalpur, Bahawalnagar, Rahim Yar Khan and Lothran.

4.2. Development of Research Tool

Since the study was descriptive in nature, therefore, survey approach was considered appropriate to collect the data. For this purpose a questionnaire on the five points scale was developed for students of M.A (Education)/ M.Ed of Region Bahawalpur.

4.3. Administration of Research Tool

The questionnaire was distributed to the students of M.A (Education) M.Ed of semester spring 2007 during the workshop and collected the researcher himself. 1250 respondents filled and returned the questionnaire.

4.4. Data Analysis

The data collected through questionnaire was coded and analyzed through Ms-Excel in term of percentage and mean scores were calculated. Scale values assigned to each of the five responses were as:

Level of Agreement

Scale Value	
SA	5
A	4
UNC	3
DA	2
SDA	1

To calculate the mean score, following formula was used.

$$\text{MeanScore} = \frac{(\text{FSA} \times 5 + \text{FA} \times 4 + \text{FUNC} \times 3 + \text{FDA} \times 2 + \text{FSDA} \times 1)}{N}$$

Where

FSA= Frequency of strongly agreed

FA= Frequency of agreed

FUNC= Frequency of uncertain

FDA= Frequency of disagreed

FSDA= Frequency of strongly disagreed

The findings from data analysis are presented below:

5. Findings

5.1. Opinion of the Students about Admission

Majority of the respondents (68.80 %) agreed with the statement that you got admission notice for distance learning well in time. The mean score 3.4

supported the statement. A significant majority of the respondents (89.28 % with mean score 3.9) agreed with the statement that you got sufficient time to submit your admission application. Majority of the respondents (64.08 % with mean score 2.5) disagreed with statement that you got prospectus easily. Majority of the respondents (64.08 % with the mean score 3.6) agreed with the statement that you got sufficient guidance and counseling by the regional office. Majority of the respondents (68 %) agreed with the statement that you easily submit fee for the admission. The mean score 3.5 supported the statement. Majority of the respondents (65.36 % with mean score 3.7) agreed with statement that you found sufficient information on the web site of distance learning.

5.2. Opinion of the Students about delivery of Material

A significant majority of the respondents (91.28 % with the mean score 4.1) agreed with the statement that you received the material packet by the institution of distance learning. Majority of the respondents (66.72 % with mean score 3.5) agreed with the statement that you received the material packet well in time. Only 54.48 % with the mean score 3.2 agreed with the statement that you received complete material packet containing books, question papers for assignments, meeting schedule, schedule for assignment submission and students guide. A significant majority of the respondents (68.24 % with mean score 2.2) disagreed with the statement that you are satisfied with delivery system of material. A significant majority of the respondents (82.64 % with mean score 3.7) agreed that you are satisfied with the delivery system of Pakistan post.

5.3. Opinion of the Students about Assignments

Majority of the respondents (60.72 % with mean score 2.6) agreed with the statement that you received sufficient material for completion of assignment. Majority of the respondents (61.92 % with mean score 2.6) agreed with statement that you easily understood the material in preparation of assignments. Majority of the respondents (69.60 %) of the respondents agreed with the statement that you received tutor intimation well in time while the mean score is 3.6. A significant majority of the respondents (85.92 % with mean score 1.6) disagreed with the statement that tutors returned your evaluated assignments with remarks. Majority of the respondents (73.04 % with mean score 2.3) disagreed with the statement that you found complete answers from the material in preparation of the assignments.

5.4. Opinion of the Students about Students Supports Services

Majority of the respondents (77.36 % with mean score 4.1) agreed with the statement that you got counseling regarding your problem from regional office. Majority of the respondents (70.32 % with mean score 3.6) agreed with the statement that the attitude of the regional office personnel was polite and cooperative. Majority of the respondents (66.40 % with mean score 3.4) agreed with the statement that you found helpful both tutor and staff of regional office.

5.5. Opinion of the Students about Tutorial Meetings

Majority of the respondents (77.84 % with mean score 2.1) disagreed with the statement that you got intimation of the study centre. Majority of the respondents (76.08 % with mean score 3.6) disagreed with the statement that you found your tutor available according to schedule. A significant majority of the respondents (88.72 % with mean score 1.8) disagreed with the statement that tutors provided sufficient guidance during tutorial meetings. A significant majority of the respondents (84.88 % with mean score 1.8) disagreed with the statement that tutorial meetings enhanced the knowledge of the course. Majority of the respondents (74.64 % with mean score 2.3) disagreed with the statement that tutorial meetings resolved students difficulties concerning understanding of material.

5.6. Opinion of the Students about quality of Material

Majority of the respondents (79.44 % with mean score 3.8) agreed with the statement that you are satisfied with quality of paper, printing and designing of material. Majority of the respondents (70.86 % with mean score 3.6) agreed with statement that the language of the material was easy to understand. Majority of the respondents (77.42 % with mean score 3.8) agreed with the statement that the content covered all the aspects of the course. Majority of the respondents (67.24 % with mean score 3.5) agreed with statement that the material was self explanatory. 53.60 % of the respondents with mean score 2.6 disagreed with statement that the material consisted on updated, modern and latest knowledge of subject. Majority of the respondents (60.30 % with mean score 3.4) agreed with statement that the material was in accordance with the distance learner's need.

5.7. Opinion of the students about workshop

Majority of the respondents (76.24 % with mean score 3.7) agreed with the statement that you received intimation of the workshop well in time. Majority of the respondents (66.80 % with mean score 3.6) agreed with statement that the environment of the classroom in the workshop was supportive for teaching learning. Majority of the respondents (68.72 % with mean score 3.5) agreed with statement that resource persons were punctual and regular during workshop. Majority of the respondents (66.48 % with mean score 3.6) agreed with statement that the lectures of the resource persons were effective for learning. A significant majority of the respondents (80.64 % with mean score 4.0) agreed with the statement that workshop covered all the content of the course. Majority of the respondents (68.80 % with mean score 3.6) agreed with statement that you are satisfied with the facilities at the workshop venue. 51.76 % of the respondents with mean score 2.6 disagreed with the statement that the duration of the workshop was sufficient. A significant majority of the respondents (89.76 % with mean score 1.8) disagreed with the statement that the resource persons utilized multimedia and projector as A/V aid. Majority of the respondents (60.96 % with mean score 3.4) agreed with statement that you are satisfied with the professional knowledge and skill of the resource persons. 50.75 % of the respondents with mean score 3.1 agreed with statement that the venue of the workshop was easy to access.

5.8. Opinion of the students about evaluation and examination

Majority of the respondents (70.4) with mean score 3.7) agreed with statement that you received roll number slip and date sheet before the examination. Majority of the respondents (66.56 % with mean score 3.5) agreed with statement that you are satisfied with the distribution of the marks for assignments, workshop and final written examination. Majority of the respondents (67.82 % with mean score 3.6) agreed with statement that there were sufficient facilities at the examination centre. Majority of the respondents (64.92 % with mean score 3.4) agreed with statement that the attitude of the examiners was polite and positive at examination centre. Majority of the respondents (76.88 % with mean score 3.0) agreed with the statement that the question papers covered all the content of the courses. Majority of the respondents (71.36 % with mean score 3.8) agreed with statement that you are satisfied with the examination system of distance institution.

5.9. Opinion of the students about results

Slight majority of the respondents (56.88 % with mean score 3.3) agreed with statement that result declared well in time. Majority of the respondents (70.80 % with mean score 3.7) agreed with statement that you received result card after declaration of result. Majority of the respondents (66.80 % with mean score 3.1) were uncertain about the statement that the correction process of the result card was easy. A significant majority of the respondents (82.16 % with mean score 3.9) agreed with statement that you got result card by post. A significant majority of the respondents (80.32 % with mean score 2.0) disagreed with the statement that you got your result card by internet.

6. Conclusions

The majority of the respondents agreed that they got admission notice, sufficient time to apply, sufficient guidance by Regional office and sufficient information on the web site of the distance learning institution. The respondents agreed that:

- the materials are received in time from institution.
- the materials are sufficient, easy and understandable for assignments from distance institution.
- Regional office provide counseling, tutors provide help and cooperate during study.
- quality printed and self explanatory material which fulfill the needs of the distant learner.
- they are satisfied with environment, resource persons , effective lectures, facilities, professional knowledge and skill of the resource persons and venue of the workshop.
- they are satisfied with distribution of the marks for assignments, workshop and final written examination, facilities at examination centre, attitude of the examiners, question papers and examination system.

Although, the majority of the respondents disagreed that they received intimation and guidance during tutorial meeting. Overall, the respondents were satisfied with the declaration and delivery of the result card of distance learning institution

7. Recommendations

The prospectus may be provided at Tehsil level to facilitate admission process:

- check on the tutors to return the students assignments with remarks
- the component of tutorial meeting may be made more effective by the Regional Office

- provide up-to-date material and knowledge of the subject
- the duration of the workshop may be increased to provide professional skill and face to face interaction with the experts of the subjects
- multimedia and projectors may be used during workshop

Therefore, taking into the account the above recommendation, the delivery system of the material may be improved.

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Effects of Using the Default LISREL Parameter Estimation Method with Ordinal and Non – Multivariate Normal Data

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Abstract

This paper aims to identify the effect of using the default LISREL parameter estimation methods when data do not meet the assumption of multivariate normality and are not continuous. The maximum likelihood (ML) and diagonal weighted least squares (DWLS) methods were applied to simulated sets of data, which have different distributions and include variables that can take different numbers of possible values. Results were also compared to the ideal situation of a data set consisting of continuous, normally distributed variables. Outcomes indicate that ML provides accurate results when data are continuous and uniformly distributed, but is not as precise with ordinal data that is not treated as continuous, especially when variables have a small number of categories and data do not meet the assumption of multivariate normality. In contrast, DWLS provides more accurate parameter estimates, and a model fit that is more robust to variable type and non normality.

1. Introduction

LISREL 8 software is frequently used for confirmatory factor analysis and provides a choice of seven estimation methods of parameter estimation: instrumental variables method (IV), two stage least squares (TSLS), unweighted least squares (ULS), generalized least squares (GLS), maximum likelihood (ML), weighted least squares (WLS), and diagonal weighted least squares (DWLS) [1]. These methods have different purposes, as well as different underlying assumptions.

In social sciences, confirmatory factor analysis is frequently conducted with ordinal data, because

measurement instruments often consist of Likert scale items. Furthermore, in numerous situations data do not have a multivariate normal distribution. These aspects violate the assumptions of some estimation methods, and should be taken into account when computing model parameters.

2. Theoretical Framework

ML is the most popular estimation procedure, most likely because it is the default option in LISREL [3]. The model parameters obtained with this method maximize the likelihood of observing the available data if one were to collect data from the same population again. It is based on the assumption that data are normally distributed, and is generally recommended to use it only when the violations of multivariate normality are only slight, with skewness and kurtosis below the cut-of value of 3. Additionally, ML assumes that the data analyzed are continuous [2]. ML can be used with ordinal data only if variables can take at least 5 different values, and they are treated as continuous when computing the correlation or covariance matrix [4].

In situations in which the assumption of multivariate normality is severely violated and/or data are ordinal, the diagonally weighted least squares (DWLS) method provides more accurate parameter estimates. The DWLS is the robust WLS method, and is based on the polychoric correlation matrix of the variables included in the analysis. It uses only the diagonal of weights in inversion, and all weights in estimation of fit and standard error. As opposed to WLS, this method can be used with small sample sizes, large models, as well as skewed and ordinal data. It uses the asymptotic variance from the asymptotic covariance matrix, which is produced by PRELIS [4].

3. Data Sources

The five data sets used in the study were artificially generated and have a sample size of 500 cases, which meets the requirement of 5-20 cases per parameter estimate. One data set represents the ideal situation of having a perfectly normal distribution and continuous variables. The other four data sets consist of ordinal variables. Two of them have three category data, whereas the other two have seven category data. In both cases, one data set is multivariate normal, while the other is non-normally distributed (Table 1). All data sets were screened using Jöreskog and Sörbom's PRELIS software. By default, PRELIS recognizes categorical data and treats it accordingly, by using polychoric correlation to compute covariance matrices. Polychoric correlation allows the estimation of the correlation between theorized normally distributed continuous latent variables, by using the corresponding observed ordinal variables.

Additionally, for each data set PRELIS was also used to compute asymptotic covariance matrices for categorical variables. These matrices are not

required to apply the ML method, but must be included when using DWLS. They are not used in iterations, and therefore, do not affect parameter estimates, and do not have to be inverted. However, they should be used to compute robust standard errors and Chi-Squares, which are corrected for non-normality.

In addition to these procedures, ordinal variables were also treated as continuous, and covariance matrices were computed using a simple Pearson product moment correlation.

4. Confirmatory Factor Analysis

All data sets were used to replicate the true model illustrated in Figure 1, which has 20 variables and five factors (four variables per factor). All the variables in the true model have factor loadings of .7, and all factor correlations are .3.

As indicated in Table 2, the T rule [1] shows that the model is overidentified: it provides sufficient information to estimate the requested parameters and enough degrees of freedom are left to be able to compute and compare fit indices.

Table 1. Data sets.

Continuous	Ordinal			
	3 Category Data		7 Category Data	
Normal	Normal	Non-Normal	Normal	Non-Normal
500	500	500	500	500

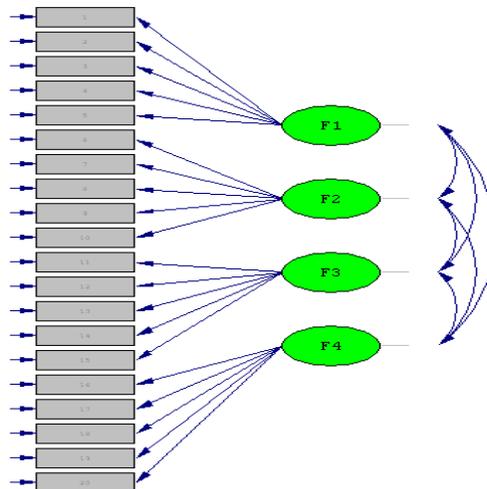


Figure 1. Estimated model.

Table 2. Using the T rule to determine whether the estimated model is overidentified.

Available Information	Information to Estimate	Degrees of Freedom
210	46	164
	<i>Errors</i> 20	
	<i>Loadings</i> 20	
	<i>Relationships between Factors</i> 6	

With each one of the four ordinal data sets, confirmatory factor analysis was conducted using three different procedures. In the first procedure, ordinal variables were treated as continuous, and parameters were estimated using the default LISREL method (ML). In the second procedure variables were treated as ordinal (default option), and parameters were estimated using the DWLS method, for which the asymptotic covariance matrix was also computed. The last procedure treated variables as ordinal, and used ML the estimation method without including the asymptotic covariance matrix. In summary, the first method uses the default estimation procedure, the second method uses the default variable type, and the third method uses default options for both variable type and estimation procedure. For comparison, the model was also estimated using the normally distributed data with continuous variables, using the ML procedure. Parameter estimates and goodness of fit indices resulted from all methods were compared to determine whether or not they might lead to different results.

5. Results

As indicated in Table 3, with the three category and the seven category data, the DWLS method estimates factor loadings, standard errors and factor correlations most precisely (closest to the true model), with both multivariate normal and non-normal distributions.

Although factor loadings are closer to .7 when non-normal three category data is treated as ordinal and ML is used, the standard errors are very large and the factor correlations are poorly estimated. Results depend more on the correct identification of

variable type, rather than addressing the variable distribution. Even when the use of ML is justified by normal distribution and variables are treated as continuous, results are biased because this method is not adequate for categorical data. DWLS has less restrictive assumptions, but the statistical quality of the estimates remains to be determined. For the three category data, this method produces a relatively large number of significant modification indices, suggesting that some items should load to different factors (this does not coincide with the true model).

Maximum likelihood is the most precise method, when the data are continuous and normally distributed. However, this is rarely the case in social science research. With ordinal data, maximum likelihood was more sensitive to variable type than normal distribution. Nevertheless, the impact of ordinal data is attenuated when the number of categories is larger.

In addition to factor loadings, standard errors, factor correlation and modification indices, goodness of fit indices for each solution were compared to determine which of the estimating procedures produces the model that best fits the data.

As shown in Table 4, chi-square values associated with each estimating procedure are significant. However, the chi-square test is sensitive to both sample and model size, and can lead to the inappropriate rejection of plausible models. Therefore chi-square divided by the degrees of freedom was used as an index of model fit. Generally, values lower than 3 indicate a good model fit. The lowest Chi-square/df ratios occur when ML is used and data is treated as continuous, (or has a larger number of categories). However, ML artificially inflates the model fit, whereas DWLS computes robust Chi-Squares and subsequent indices, by correcting for non-normality.

The RMSEA index estimates how well the proposed model approximates reality [2]. Values between .05 and .08 indicate a fair model fit, whereas values smaller than .05 show excellent fit. In most cases, DWLS method has the lowest RMSEA index (close to 0), indicating that this method has the lowest average error left unaccounted for, and the model fits the data almost perfectly.

Table 3. Range of parameters estimates and number of significant modification indices for each data set and estimation procedure.

	Loadings	Standard Errors	Factor Correlations	Significant Modification Indices
<i>Norm Cont ML</i>	(.65-.71) all significant	(.48-.58) all significant	(.23-.39) all significant	0
3NCont ML	(.53-.71) all significant	(.53-.72) all significant	(.26-.31) all significant	0
3Ncateg DWLS	(.60-.77) all significant	(.40-.64) all significant	(.27-.33) all significant	2
3Ncateg ML	(.59-.78) all significant	(.39-.66) all significant	(.26-.32) all significant	7
3NNCont ML	(.43-.57) all significant	(.82-.62) all significant	(.06-.28) all significant	0
3NNcateg DWLS	(.58-.77) all significant	(.41-.66) all significant	(.09-.35) all significant	10
3NNcateg ML	(.62-.74) all significant	(.48-.66) all significant	(.08-.36) all significant	0
7NCont ML	(.56-.71) all significant	(.50-.69) all significant	(.31-.37) all significant	2
7Ncateg DWLS	(.65-.72) all significant	(.48-.67) all significant	(.31-.37) all significant	0
7Ncateg ML	(.57-.72) all significant	(.48-.68) all significant	(.31-.38) all significant	3
7NNCont ML	(.47-.67) all significant	(.55-.76) all significant	(.19-.36) all significant	2
7NNcateg DWLS	(.63-.80) all significant	(.36-.67) all significant	(.19-.43) all significant	2
7NNcateg ML	(.57-.78) all significant	(.39-.67) all significant	(.18-.42) all significant	29

Table 4. Fit indices.

	Chi-Square	df	Chi-Square/ df	RMSEA (CI 90%)	SRMR	ECVI (CI 90%)	AIC	NNFI	AGFI
Norm Cont ML	165.46	164	1.01	.0042 (.00-.02)	.029	.52 (.51-.58)	256.46	1.0	.96
3NContML	129.67	164	0.79	0.0 (.0-.0)	.027	.51(.51-.51)	221.67	1.01	.97
3NcategDWLS	260.29	164	1.59	0.0 (.0-.0)	.032	.51(.51-.51)	224.31	1.01	.99
3NcategML	259.86	164	1.58	.034 (.03--.04)	.033	.71(.63-.80)	351.86	.98	.94
3NNContML	165.61	164	1.01	.004 (.00-.07)	.037	.52(.51-.59)	257.61	1.0	.96
3NNcategDWLS	1116.84	164	6.81	0.0 (.0-.0)	.076	.51(.51-.51)	6062.50	1.01	.98
3NNcategML	1090.85	164	6.65	.11 (.10-.11)	.077	2.37(.22-.59)	6062.5	.77	.77
7NContML	182.73	164	1.11	.015 (.0-.07)	.033	.55(.51-.62)	274.73	1.00	.95
7NcategDWLS	214.46	164	1.31	.014 (.0-.025)	.034	.55(.51-.62)	272.03	1.00	.99
7NcategML	213.65	164	1.03	.025 (.01-.03)	.035	.61(.54-.70)	305.65	.99	.95
7NNContML	188.89	164	1.51	.017 (.0-.03)	.038	.56(.51-.64)	280.89	.99	.95
7NNcategDWLS	549.19	164	3.34	0.0 (.0-.01)	.054	.51(.51-.53)	233.14	1.0	.98
7NNcategML	540.48	164	3.29	.068 (.062-.074)	.055	1.27(1.13-1.42)	632.48	.92	.87
Benchmark			< 3 acceptable fit	0=perfect fit <.05 good fit <.08 fair fit >.10 poor fit		Lowest value shows better fit.		>.9 acceptable fit >.95 good fit	

SRMR reflects the size of the fitted residuals, with small values indicating a better fit [2]. Regardless of the number of data categories and variable distribution, the ML estimation method produces the lowest SRMR values, if the data is treated as continuous.

The ECVI value shows how well the proposed model is expected to cross-validate, and low values indicate good model-fit [2]. Results obtained with the different estimation methods show that in most cases the model obtained with DWLS is most likely to cross validate. The AIC index is used to compare models with different numbers of latent variables, taking into account the model complexity and fit [2]. AIC values that are closest to 0 show the most parsimonious model. Regardless of data distribution, the maximum likelihood method produces a lower AIC index when the data has only three categories, and is treated as continuous. When the data has seven categories and the DWLS method is used, AIC indicates a more parsimonious model.

NNFI indicates how much better a model fits the data relative to a model with no structure, assuming that sampling error explains covariation among measured variables [2]. The closer its values are to one, the better is the model fit. When the data are normally distributed, both ML (when variables are treated as continuous) and DWLS provide high NNFI values. Nevertheless, when the assumption of multivariate normality is not met, NNFI indicates that the DWLS method produces a model that better fits the data.

AGFI indicates how much variance the proposed model accounts for [2]. Values above .9 are generally considered acceptable, while an AGFI value of .95 indicates that the proposed model fits the data very well. This index is used to compare the fit of different models with the same data, and is adjusted for the degrees of freedom of a model relative to the number of variables. It is, therefore, an important index to consider in interpreting the results of our analysis. In all cases, regardless of data distribution and number of data categories, the best AGFI values are recorded when the data is treated as ordinal, and the DWLS method is used to estimate model parameters.

Goodness of fit analysis also indicates that in all situations, estimation is less precise when both default LISREL options are used: data is treated as categorical, and parameters are computed based on

maximum likelihood. This outcome is not unexpected, because there is a mismatch between the nature of the data and the estimation method used: covariance matrices are based on polychoric correlations, but ML treats variables as continuous, and the asymptotic covariance matrix is not included in the analysis. Model fit is more drastically affected when the distribution is skewed, because the ML assumption of multivariate normality is not met.

6. Conclusion

Based on the results presented above it can be concluded that the methods of parameter estimation in confirmatory factor analysis should be carefully chosen, by taking into account the extent to which the data sets utilized meet their inherent assumptions. ML is adequately used in a perfect case scenario, when the data are continuous and uniformly distributed. The accuracy of this estimation method is mostly affected when it is used with ordinal data that is not treated as continuous, especially when variables have a small number of categories. Additional estimation error occurs when the data does not meet the assumption of multivariate normality.

In contrast, DWLS provides more accurate parameter estimates, and the fit of the model is more robust to variable type and non normality. Further investigation is needed to determine whether these findings can be replicated with a large number of samples, as well as across different sample sizes.

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Interactive Graphic Organizers: A case of ICT curriculum integration in higher education

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Abstract

VirtuaLab-USACH developed Interactive Graphic Organizers (IGOs), a software application built with components on Adobe Flash and Air platforms. IGOs are modular, interactive and facilitate both students thinking skills development and teachers interactive visual content display. This article presents some results from IGOs curriculum integration evaluation. IGOs were integrated into learning activities in an Information Systems Design course (belonging to the seventh of twelve semesters in Industrial Civil Engineering degree course at the University of Santiago, Chile). A quasi-experimental design was used where students from the experimental group (the course) were invited to use the IGOs in their learning and assessment activities. A working hypothesis was stated for the curriculum integration; and comprehensive tools were developed for data collection.

1. Introduction

An Interactive Graphic Organizer is a combination of non-linguistic representations (shapes, symbols and arrows) with linguist elements (words and phrases). Interactive Graphic Organizers facilitate the discovery and design of patterns, relationships, and interrelationships, as well as helping to develop creative thinking.

This article presents a case study in which a set of IGOs associated with a group of thinking skills were integrated into a course curriculum in higher education. The paper begins with a description of the research problem. It then presents some background information: a conceptual summary, a brief IGOs description and the ICT curricular integration model used. Next, it presents the evaluation design. The main findings are presented in terms of quantitative impacts and students perceptions. Finally, a couple of conclusions are outlined.

2. Research focus

The research was conducted into an information systems design course, which belongs to the seventh

level (out of twelve) of the Civil Industrial Engineering degree at the University of Santiago, Chile. The course runs for 17 weeks with 102 hours per semester. Week activities include 1 hour lecture; 2 hours seminar, 2 hours laboratory assignment. Other semester intermittent activities were 12 hours case discussion and time for assessing.

According to the course lecturers, after several semesters running and assessing students on the course, they had noticed that the students evidenced an inadequate thinking skills level important for course content understanding. Students usually confuse problem origins and consequences; incorrectly identify attributes to compare objects; have difficulties structuring sequences and so on.

For example, as the course starts, students must state a real organizational problem, in which information management is an important component. The problem wording was of great complexity in previous semesters, students showed weaknesses in their ability to distinguish between problem symptoms (causes) and problem consequences (effects); often the problem was associated with some of its symptoms.

Another example is their difficulty to complete a promise structured syntactic (actor 1 + fixed verb + action + actor 2).

Given the diagnosis, and as Interactive Graphic Organizers software was designed to practice and develop thinking skills, it was decided to integrate the IGO software into learning activities to improve students evidence production through developing thinking skills critical to the subject understanding.

The IGOs' use sought to develop on the students a deep learning approach through making available to them these technological artefacts.

3. Background

Because the IGO software curricular integration looked for students memorable experiences, background elements presented are deep learning, interactive graphic organizers and ICT curricular integration model.

3.1. Deep learning

Deep learning is immersed within the constructivist view and is the opposite of memoristic or repetitive learning [1]. Deep learning arises when substantive and non-arbitrary relationships are built between what is already known (previous content) and what is to be learnt (new content) [2, 3, 4]. Thus, learning is an active process where new understandings are built by designing and creating meaningful experiences for learners. This should facilitate the organization of learner's cognitive structure [5, 6].

Three requisites are required to accomplish deep learning. Firstly, logical significance of content, contents should be intentionally organised so that learners can build relations between new content and their previous knowledge. Secondly, psychological significance of content, related to the internal representation made by learners of logical significant content. Thirdly, learners' favourable attitude to substantively, profoundly and not literally relate their cognitive structure with the new material [7, 8]. The presence of deep learning in educational environments depends upon the mediation between didactic (methods and strategies) and learning outcomes. This requires a rigorous and systematic teaching and learning planning, including content and aims characteristics, learner starting level, methods, didactic sequences, and learning strategies to facilitate deep meaning of contents and activities.

Knowledge construction, either semantic or procedural, is particular process that requires a logical set of operations or courses of actions.

Basic cognitive operations such as observation, comparison, classification, analysis and synthesis are better developed when learning activities consciously put emphasis on their need to process content and create new knowledge [9].

3.2. Interactive Graphic Organizes

The use of visual aids and diagrams facilitates thought clarification, reinforces understanding, integrates new knowledge and allows misconception identifications [10]. Visual artefacts also facilitate patterns interrelationships and interdependencies discovery, as well as developing creative thinking [11]. For example, through a similarities and differences diagram, a student has a visual technique that enables him/her to compare two or more objects or events.

The software Interactive Graphic Organizers are visual diagrams developed using software components technology [12] and implemented in Adobe Flash. This allows easy integration into Web environments and Flash compatible software.

As shown in Figure 1, each organizer has functionalities in a tool bar to create, edit, remove, store, retrieve and print what a student is developing or has completed interactivity through adding and editing graphic forms.

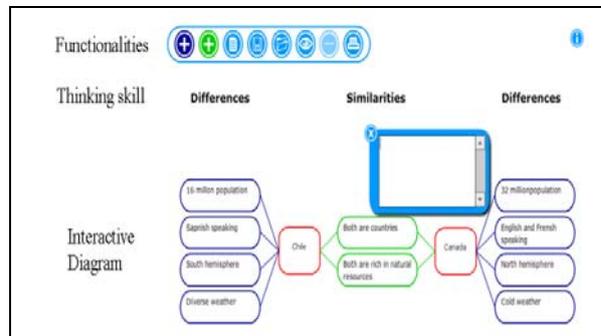


Figure 1. IGO structure

The Interactive Graphic Organizers features grant them a high degree of interactivity, allowing cognitive skills development. In particular, IGOs can be used for (1) cognitive skill development and (2) reading comprehension:

Cognitive skills development: IGOs are particularly useful for challenges where students are required to develop an idea or order thoughts. Here IGOs become well-defined structures that guide students thinking; students enter in a systematic dialogue with themselves (meta cognition and meta learning) assisted with a technological tool.

Reading comprehension: IGOs provide direct support to reading understanding by allowing the reader-learner to make sense and extract meaning before, during and after reading [13].

Interactive Graphic Organizers are grouped into six categories, one is cognitive abilities and includes the following diagrams: Analogy, Brainstorming, Cause and Effect, Comparison, Definition, Differences and Similarities, Domino Effect, Dual Descriptor, Fishbone, Hierarchic Semantic Map, Hierarchy, Orbital, Pro Con, Puzzle, Pyramid, Semantic Map, Snapshot, Spider, Synonym and Antonym, System, and Timeline.

3.3. ITC curricular integration

ICT effective use in education is widely reported and interesting examples are [14, 15, 16, 17, 18, 19, 20, 21]. The literature, however, is not as abundant on ICT curricular integration models [22]; for example, there are proposals for languages [23], science and social science [24]. All place great emphasis on the teacher willingness [25] and are based on means and content provision [26, 27].

The authors work with an ICT curricular integration model based on learning to learn; skills and values development; and teachers as facilitators of students learning [28].

This model proposes learning outcomes specification through skills and abilities (cognitive domain); values and attitudes (affective domain); significant contents (knowledge architecture) and methods or learning activities. Contents and methods are the means and skills, abilities, values and attitudes are objectives; all these are arranged in a double T [28], as shown in Figure 2. The model includes contents and methods assessment.

Contents	Means	Methods/activities
Skills/abilities	Objectives	Values/attitudes

Figure 2. Double T

The T model facilitates the curricular integration of ICT as means for learning activities, which ensures that ICT are used as a strategic tools [29], particularly to facilitate evidence gathering and assessment by portfolio.

4. Research design

A quasi-experimental design was used with control and experimental group. Students on the course during 2008 first university term constituted the experimental group. Student on the same course but taken on 2007 second university term constituted the control group. Therefore, different students constituted the control and experimental groups.

The experimental group (the course) was invited to participate in learning activities that integrated the IGO software. Seven IGOs were used in 10, out of 19, students learning activities. IGOs implemented were: Cause and effect (problem, origins and consequences discrimination); Generic Grid (events analyses under variables); Definition (concept construction); Box Linker (relations between initial and other elements); Comparison (non-randomly objects comparison); Brainstorming (ideas representation); and Sequence (dependency relations).

Typically, learning activities included learning outcome identification; activity name and brief description; IGO(s) used (if appropriate), and step by

step instructions for producing the digital and physical evidence. Figure 3 illustrates a learning activity (challenge) that integrates the software IGO “Cause and Effect”.

Challenge 1: Identify and summarize a real information problem.
Description: You will need to state an information problem, differentiating it from its causes and effects.
File: CauseEffect.swf
Hint: Use software tool tips o find IGO functionalities. For any doubts, please ask your assistant.
Instructions
1. Download, open and save a Word document with the name “InformationProblem.doc”. Enter your name, course and company name.
2. Briefly describe the company and its information problem.
3. From your description, list problem’s relevant issues.
4. Download and open CauseEffect.swf. Enter your problem in the red box. Use the blue + button to insert cause boxes, enter causes in the blue boxes. Use the green + button to insert effect boxes, enter effects in the green boxes. Save the file with “InformationProblem.ceigo” as its name.
5. Once done, please save all files and upload them to your working folder.

Figure 3. Learning activity

Learning activities assessment was base don previously prepared checklists. Figure 4 shows the checklist for the above learning challenge (Figure 3).

Indicator	Description	Max %	%
Evidences	InformationProblem.doc (description and issues list)	10	
	InformationProblem.ceigo (causes-problem-effects)	5	
Pertinence	Correctly define.	Problem	10
		Causes	10
		Effects	10
Consistency	Between .doc and .ceigo.	10	
Synthesis	Analysis and conclusion.	45	
Results		100	Σ

Figure 4. Checklist

To evaluate the impact of the curricular integration of the IGO software on students learning and study practices quantitative data gathered from the experimental and control groups was analysed as well as analysis made from data gathered through interviews, focus groups, and student activities observation.

5. Findings

Findings regarding the use of IGOs by the engineering students are presented both quantitatively and qualitatively.

5.1. Quantitative analysis

The effects of two IGOs on students' learning are presented; the first one relates to the use of the Generic Matrix to develop a group activity, and the second, it is the use of the Cause-Effect Diagram on individual activities.

5.1.1. Generic matrix

To compare the results on group learning, the groups' reports by the 2008 first university term (experimental group) were compared with the groups' reports by students on 2007 second term (control group). The control group was formed by a different group of students and they did not use any of the graphic organizers.

Both, experimental and control groups, were given the same task: to structure a promise network [30]. To work on the task, the students form small work groups of 3 or 4 members. The control group was formed by 9 workgroups and the experimental group by 14 workgroups.

The different between the control and experimental group is that to structure the promise network, the experimental group was asked to additionally use and complete a Generic Matrix indicating actors, verbs and actions (elements of the promise network). The control group, on the other hand, directly structured the promise network. Figure 5 presents the structure of the generic matrix:



Figure 5. Generic matrix IGO

The quality of the promise networks by the control and experimental groups were assessed by a two experts using a 1 to 7 scale (assessing scale used in Chile).

Table 1. Mean and Stdv of promise network task

Groups	Mean	Stdv
Control	5.633	.9500
Experimental	6.571	.3667

The results from the assessment were normally distributed and a t-test was used to compare the means. The experimental group shows a significant improvement compared with the control (t-student = 2.83, p-value = .01, df = 9 and $\alpha = .05$).

Thus, the use of the generic matrix IGO had a positive impact on the task related to structuring a promise network.

5.1.2. Cause and effect diagram

The same groups —control and experimental— were assessed regarding now their individual skills to formulate and frame a problem situation. The experimental group, formed by 45 students, used the IGO called “Cause and Effect Diagram” to facilitate the task. The control group, formed by 35 students, did not use any IGO.

Figure 6 shows the structure of the cause and effect Interactive Graphics organizer.

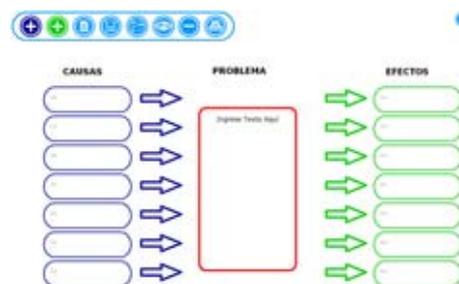


Figure 6. Cause and effect IGO

The quality of the problem formulation and frame was assessed by two experts.

Table 2. Mean and Stdv of problem formulation task

Groups	Mean	Stdv
Control	5.523	1.292
Experimental	6.066	0.949

The data from the assessment were not normally distributed so a non-parametric analysis was used. The analysis indicates that the experimental group shows a significant improvement compared with the control (U de Mann-Whitney = 599.5, p-value = .03, and $\alpha = .05$).

Thus, the use of the cause and effect IGO had a positive impact on the task related to formulating and framing a problem situation at individual level.

In both cases, the use of IGOs by students on their group tasks and on their individual tasks shows significant improvements compared to those students that did not use this technological artifact.

5.2. Students perceptions

Information from students showed that IGOs curricular integration most valued aspects were: (1) structural thinking, (2) keep focus on what matters, (3) advantages of using IGOs, and (4) usability strengths of using IGO. Students also had some critical observations, such as course structure and some aspects of usability.

5.2.1. Structural thinking

Students thought that IGOs use helped them not only to think but also to think more structurally, think with more sense, organise ideas more easily and synthesise more rapidly. Some students' remarks were:

"I found that the tool was useful to organize ideas and to enable the identification of what are causes and what are effects... One is conditioned to think in that way when faced with a problem and have the experience to deal with. I will know that the obtained optimal response is modelled following the pattern of the graphic organizer, which allows avoiding confusion, leaving a record of thoughts and one becomes aware that everything can be so orderly."

"One realizes that in reality this is spinning, and as I said to my fellow students, it helps us organize and focus the ideas, because sometimes you have an idea in your head, but a thousand things come to mind, while here synthesis is easier and so useful"

"It is super useful as we work here, because is so easy to deviate and you say ah I want this but the company wants that, but I'm solving a problem and have to be more specific. This is something incredible, one is forced to synthesize."

5.2.2. Focus on the relevant

Students considered that using the IGO software allowed then keeping focus on what mattered to the course: solve an information problem through an information system design and prototype. A couple of quotes from students are:

"IGO serve to emphasize the central fact, and do not misunderstand the sense of making new things, very useful for the course purposes. The clear problem definition made me aware that I had to design a solution."

"What is sought is to solve an information problem and avoid being impressed by complex programming and in that IGOs were absolutely useful."

5.2.3. Course strengthening

Students said that IGOs use strengthened the course, because the use of innovative tools. Students, for example, said:

"I learnt to use a tool which helps me to solve problems. There is a perception change from programming to design. It is useful and with a lot of potential for future use".

"I appreciated the weekly deliveries; it keeps a good study pace and the use of IGO tools helped not only to understand and learn course content, but also to finish the assignments on time"

5.2.4. IGOs advantages

IGOs use presented various advantages for students, among them:

"They accomplish its function for visually present and understand course content. Information within the IGO allowed an easy ride on course contents through easy organization of ideas, concepts and information".

"IGOs allowed permanent contact with the initial problem. May be, without the Interactive Graphic Organizers, the solution would have not been possible and we had ended with a set of pretty windows only. The second time I used the Cause and Effect IGO, I realised how the course unit are related and it was so much easier to learn".

5.2.5. IGOs usability

Students recognised that IGOs are easy to use; at first sight, colours are attractive; and they are visually simple. Students reckoned that IGOs simplicity is their most outstanding feature, in contrast to traditional educational software, which have infinity options and buttons, many never used.

5.2.6. Disadvantages

Students mentioned two aspects that can be categorised as disadvantages. First, they found difficult to get used to the course style with weekly assignments and practically giving a couple of hours daily. "At the beginning it is difficult, it is hard to assume continuous work, until you get used to it", as one student put it.

Other critical points were the small amount of text that IGOs allowed and the complexity to save

them. Both amendments were quickly introduced to IGOs.

6. Conclusions

Considering a) that, the opportunity sought by this study was the IGO software curricular integration to develop and improve student thinking skills, critical for content understanding and b) quantitative and qualitative results, it is possible to conclude that:

- Students enhanced their course understanding though the improvement of some their thinking skills, which were developed and exercised with IGOs.
- Interactive Graphic Organizers can successfully be used as a methodological resource for learning activities.

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Many thanks for your participation!

We hope to see you at

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November 8-11, 2010, London, UK

Have a great trip back home!!!

