

**The Quality of the Student Experience
of Higher Education:
an investigation in Hong Kong**

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Abstract

This work begins by examining the issue of quality in higher education. No universally agreed definition seems to exist. It is argued that the concept of the quality of higher education can only be expressed in terms of each of the different purposes of a university. The concept of the quality of the teaching and learning dimension of a university's mission is considered. It is then further argued that the quality of this dimension must be connected, in part at least, to the student experience and to students' learning outcomes. Various literatures on quality and quality assurance, students' approaches to learning and student engagement are explored.

In order to explore this relationship between quality, the student experience and learning outcomes some empirical research was conducted in Hong Kong to address the following research questions which emerged and were refined through the review of the literature:

‘What is the student experience of higher education in Hong Kong like (ie what are its qualities)?’

‘How does the student experience affect learning outcomes?’

The fieldwork was conducted by means of an adapted version of the North American survey instrument the ‘College Students’ Experience Questionnaire’. The instrument was adapted using a progressive Focus Group technique. The questionnaire was then administered to a representative sample of (5600) full time undergraduate students in all of the universities in Hong Kong. The results describe the student experience in Hong Kong. By using multiple regression techniques an exploration is made of the association

between certain forms of engagement in university activities and learning outcomes. The results of these analyses are reported and the implications discussed. Finally some policy recommendations are made.

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**Thesis title: The Quality of the Student Experience of Higher Education:
an Investigation in Hong Kong**

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Introduction

Preamble

This work is about the quality of the student experience of higher education in Hong Kong. It arose partly due to some concern about the increasing prevalence of the concept of 'quality' in universities during the late 1980s and 1990s and the seeming absence of an agreed definition of quality. The study examines this concept and argues that universities have multiple missions rendering a single quality index or definition impossible to sustain. It is further argued that quality can only be usefully defined in terms of each of the component parts of a university's mission separately. The work concentrates thereafter on the 'teaching and learning' dimension of higher education. It is concluded that the quality of this aspect of university purpose must, in part at least, be defined in terms of how far learning outcomes are achieved. Learning outcomes are achieved in universities not simply by means of teaching alone but by a broader concept usually referred to as the 'student experience'.

In order for university managers and policy makers to provide a quality higher education, it is suggested that more must be known about the relationship between the various components of the student experience and learning outcomes. The work then sets out to conduct empirical research to find out more about the student experience in Hong Kong and its relationship with learning outcomes. More specifically, the following research questions are postulated:

- What is the student experience in Hong Kong (i.e. what are its qualities)?

and

- How does the student experience affect learning outcomes?

A questionnaire from North America (the College Students' Experience Questionnaire) was adapted, using Focus Group techniques, for use in Hong Kong. The adapted version, called the University Students' Experience Questionnaire (USEQ) was administered to a large sample of Hong Kong students ($n = 5,683$). The results of this survey are described in order to address the first of the research questions. Because of the easy availability of certain similar data gathered over a number of years in North America, where relevant, these are presented alongside the Hong Kong data for comparative purposes.

Further multivariate analysis was then carried out to determine the relationship between the various student experiences and learning outcomes as measured by students' self-reported gains. The empirical work shows that approximately 35% of the variance in students' estimates of gains can be explained by their experiences in higher education. The detailed results of the multivariate analysis are discussed in some depth. The study concludes with a number of policy recommendations for higher education leaders and policy makers.

In the rest of this introduction, the very general concerns which aroused the initial interest in the topic are described. The generic background to the notion of quality in the public sector is described. The applicability to higher education, as a public service, is considered in general terms. The notion of quality as it may be applied in a university context is discussed. Brief consideration is given to how a concept such as quality might be applied in higher education with respect to the varied purposes of a university.

The Genesis of the Research Topic: Quality in Higher Education

The primary motivation for this work came from a growing unease which arose in some people's minds during the late 1980s and the early 1990s about the emergence of the concept of 'quality' in many dimensions of society. Taken at face value, the idea that industry, commerce and public service organisations (for it was primarily to organisations as opposed to individuals that the concept was applied) should strive for quality was particularly seductive. Like motherhood and an improving book, quality is a worthy ideal — unquestionable and an inherent good. The unease began to arise because of the difficulty in establishing with any precision, the definition of quality or the constructs which underpin it.

Yet the use of the word was growing. In higher education, quality had been around for some time. The word 'quality' had begun to replace 'standard' in the late 1980s. (Frazer, 1993). Higher education vocabulary (perhaps only the higher education 'management' vocabulary to be precise), began to talk about 'quality culture'; 'measuring quality'; 'quality indicators' and 'quality assurance'. Even the industrial term 'Total Quality Management' entered the corpus of higher education language (see for example Geddes, 1993, and Harvey and Green, 1993). There seemed to be no readily accepted definition or theoretical model for this concept when applied to higher education. So how on earth could these associated terms be understood or be meaningful in a university context? All of these issues seemed troublesome.

Quality in higher education, it soon becomes apparent, is part of a wider phenomenon of concern about accountability of the public sector for services provided. The phenomenon

is far from unique to higher education. A number of authors, including Hood (1991), Pollitt (1988) and Stewart and Walsh (1990) have illustrated how and why this concern for greater accountability throughout the world has arisen and what its manifestations have been. Higher education, being a public service, is part of that general movement and is in some ways archetypical of it (see for example Frazer, 1992, Williams and Loder, 1990). In different higher education systems throughout the world (as is the case for various parts of the public sector) concerns about this need for greater accountability have manifested themselves in calls for greater efficiency and effectiveness; for performance pledges and citizens charters; for audit and review; for performance indicators; measurements of inputs, processes and outputs. In short there emerged a universal demand for quality.

For higher education, one of the earliest references to quality came in the late 1960s in Canada (Committee of Presidents of Universities of Ontario, 1967) but the terms quality and, more particularly, quality assurance became essential parts of the higher education vocabulary as many higher education systems were in the process of moving from what were essentially elite systems to mass systems. In the UK, that movement took the form of firstly, the Robbins expansion of higher education in the 1960s to be followed by the creation of Polytechnics and Central Institutions from the 1970s onwards but similar developments have been noted in Australia, New Zealand, South Africa, Holland, and Germany (Frazer 1992). These emerging institutions, empowered to award degrees, which had been, until that time the sole province of what can be called traditional universities, brought about a concern to ensure that standards of first and higher degrees and other qualifications were at least the same as in the traditional universities.

Systems and mechanisms for ensuring that standards were maintained were elaborately created and brought to bear upon these new institutions and the programmes that they were offering. In fairly short order, and certainly by the late 1980s, those processes were being labelled 'quality assurance'. So the emergence of the quality word in the higher education vocabulary, noted above, grew out of the expansion into a mass higher education system from being an elite higher education system. This reasoning will be important when considering whether the same phenomenon is at work in Hong Kong.

What Exactly is Quality ?

Thus, in the beginning, quality was about standards and their maintenance. But quality seems to have moved on since then. As was noted above, the increasingly wide use of the word (Armour, 1992) indicates that it is taking on broader, more fundamental aspects beyond the initial concept of maintaining standards. In higher education circles round the world there is now quality audit; quality assessment; quality enhancement funds; quality control. Clearly quality has become important but what exactly is quality? This question is not new. Sir Christopher Ball asked the question succinctly in his book 'Fitness for Purpose' by giving one of the essays the title 'What the Hell is Quality?' (Ball 1985). Frazer (1992) points out that although it is agreed world-wide that quality is important there is no consensus about its definition or meaning. But is the definition of quality important? Intuitively one would suggest that it must be important since it has emerged in the vocabulary in so many different forms. But if none of the quality dimensions have any effect on the higher education 'real world', then it may not matter so much. So the relevance of understanding quality is arguably, dependent on what you want to 'do' with quality.

Returning, for a moment, to some of the literature surrounding the definitions of quality for the public sector as a whole, we find in that literature, some agreements about certain dimensions of quality as follows:

- *some form of specification of performance and assessment of compliance with performance (i.e. the 'fitness for purpose' aspects).*
- *attitudes/behaviour/expectations between the consumer of the service and the provider.*
- *the cohesiveness of the organisation as a whole and its internal and external consultation policies (i.e. the notion of total quality).*
- *the satisfaction of the participants and their organisational contentment.*
- *involvement of stakeholders.*
- *analysis, review and evaluation.*
- *the interdependence of all of these aspects.*

(see Stewart and Walsh (1990), Gaster (1992))

For certain of these dimensions to have any meaning (e.g. assessment of compliance with performance; analysis review and evaluation) in higher education, quality will require to be defined in some meaningful and therefore usable, way. Only after definition, can anything be 'done' to quality such as measurement or evaluation of its presence or absence. One way of approaching the question of definition and then measurement is paradigmatically, in terms of the social science or educational research.

Quality as a concept is no more or less abstract or difficult than many others investigated in the disciplines of say, sociology, anthropology, psychology or education. For example, in the 1960s, in order to measure the achievement of school children and the factors which influence achievement (see Plowden Report, 1967) many difficult concepts had to be considered and measured. These included highly value-laden ideas such as social class, home background, parental expectations and achievement. So too with the concept of quality, although an ill defined, highly subjective term it can be measured by determining constructs of the concept; determining indicators to operationalise these constructs or dimensions; and then obtaining instruments to collect data and thus obtain a value for each of the indicators.

Measuring Quality

A number of scholars (see Lindsay (1993), Harvey and Green, (1993), Nadeau (1993)) argue that, in the absence of a theoretical model to explain quality, researchers must take a pragmatic approach to defining quality (i.e. by seeking the views of those who are usually described as 'stakeholders' in the educational process). Stakeholder groups can include students, staff, employers of graduates, governments, educational policy making/funding bodies. But that then raises another question. What do we mean by higher education? To investigate the concept of quality in higher education, consideration must surely be given to higher education itself. What is it and where does it take place?

By the mid 1990s three seminal studies were being undertaken about the definition of the concept of quality and the derivation of indicators. In the UK, the Quality in Higher Education Project at the University of Central England (Harvey, 1993) and a study by

Williams, Loder and Fry (1993) at the Institute of Education, University of London both investigated this issue in some depth. In Canada, Nadeau (1993) has conducted similar research. At least two of these studies have produced preliminary conclusions which suggest that definitions or dimensions of quality depend on the perspective of the stakeholder. For example, students may place a higher value on certain aspects of the higher education experience than do, say, employers. University staff favour yet different dimensions. This suggests of course that there may be no single definition of quality.

Many of these studies have approached the concept of quality by looking at the university as a whole and this is reflected in the diverse criteria of quality suggested by the different stakeholder groups in the studies discussed above. It is natural for different stakeholder groups to value that which is important to them. A university has many varied purposes and diverse missions. It is difficult nowadays to argue against Bok (1982) and Kerr (1963) who introduced the concept of the 'multiversity', the huge entity fulfilling many roles. Kerr describes the then University of California as:

...the huge organisation with more than 100,000 students, more employees than IBM and in a far greater diversity of endeavours.

Kerr (1963, p. 6)

In particular, it is this notion of the multiplicity of objectives that must make the assessment of quality of the **university as a whole** so fraught. Romney's (1978) goal inventory lists twenty possible major goal areas for a university as diverse as: 'Traditional Religiousness'; 'Social Activism' and 'Vocational Preparation'. It would seem then to be axiomatic that the quality of a university or higher education seen holistically, must in some way deal with the multiplicity of these sometimes conflicting objectives.

Now, there are those who would argue that that is **exactly** how the quality of higher education should be assessed, i.e. in terms of whether it satisfies its stated goals, no matter how diverse these goals are or to which purpose they relate (see for example Ball's (1985) 'fitness for purpose' model of higher education quality assurance). But as a number of others including Green (1994) have pointed out, that definition begs the very important question of the appropriateness of the purpose or aim being set. In other words, for an institution to satisfy an inappropriately mediocre aim would not attest to that institution's quality. Rather than deal with the question of quality in the whole university context then, one might reasonably consider it more profitable to examine the quality of discrete, coherent parts of the university purpose. In effect this is what happens in the UK at present where the assessment of the quality of research is a quite distinct process from the assessment of the quality of teaching.

Arguably, teaching is one of the activities common to all higher education institutions which bear the name 'university' and most of those which do not. The tiny number of higher education institutions which do not, are mainly small research organisations. There is even an argument to say that undergraduate teaching is a necessary (if not a sufficient) condition of 'universitiness'. To quote one of the most cited writers on higher education:-

The view taken of a university in these discourses is the following: that it is a place of teaching universal knowledge. This implies that its object is on the one hand intellectual and not moral; and on the other, that it is the diffusion and extension of knowledge rather than the advancement. If its object were scientific and philosophical discovery, I do not see why a university should have students.

(Newman 1873, p.7)

For the scholar John Henry Newman, the essence of the university was its teaching.

There would seem to be a sound argument for choosing undergraduate teaching as one of the most important dimensions along which at least part of university quality might be measured.

The Scope of the Study

As a result of this reasoning, it was decided to investigate the area of quality in respect of the teaching and learning aspect of a university's mission. Fortunately, the Hong Kong Government via its higher education funding body the University Grants Committee (UGC) made available a 'Quality Enhancement Fund' principally to improve quality in university teaching but provision was also made to consider limited applied research proposals in key specified areas. One such area was the development of protocols to evaluate the quality of the undergraduate student experience. Funds were obtained to carry out such a project. It was also anticipated that primary research might be carried out which would add to the body of knowledge about higher education.

The basic argument will begin by considering the concept of quality in higher education. It will be suggested that quality can only be considered in any meaningful way in terms of a university's various functions or parts of its mission. The study will focus on the investigation of quality in terms of the teaching and learning dimension of a university's activity. It will be further argued that one of the most important indicators or determinants of the quality of the teaching learning dimension will be how far desirable learning outcomes are achieved. Consideration will be given to the university effect or process

which produces desirable learning outcomes. The principal objective will be to produce policy recommendations which will enhance the opportunities for learning outcomes to be achieved during the time students attend university (the student experience). The argument will be presented and progressively focussed and refined via literature review and empirical research will be conducted to better understand the phenomena.

In Chapter 1 Higher Education in Hong Kong, some background information relating to the development of the university system is set out alongside a broader discussion of the Hong Kong historical, educational and governmental context. Chapter 2 discusses the relevant literatures and presents a thorough examination of the 'Quality Assurance' literature. This literature is relatively extensive. It also covers a wide range of university functions. However, it is linked together by an overarching concern for the notion of quality in universities.

The next chapter, Chapter 3 deals with the 'Student approaches to learning' literature which examines the quality of teaching and learning in terms of the various study strategies students adopt and the achievement of optimally desirable learning outcomes. Chapter 4 considers the 'College Impact' literature. This body of literature emanates principally from North America and considers the question of the impact that higher education has upon students. This chapter also concludes with a brief review of some of the more significant conclusions which can be drawn from the review of the various literatures and tentatively postulates a conceptual framework upon which the rest of the study will be based.

The following chapter, Chapter 5, 'Research Design and Methodological Approach' discusses issues of research design, and sets out the reasoning behind the adoption of the particular strategy. The chapter further describes the process of choice and adaptation of the questionnaire. In addition the procedures for administration of the adapted instrument are described. In Chapter 6, 'Some Characteristics of the Student Experience in Hong Kong', some of the results of the study are described. The chapter deals with various descriptive statistics such as background information of the sample. Where possible, comparative figures from the US are also given in order to illuminate the Hong Kong data. Some preliminary data about levels of student engagement is set out based on the results of the activity scale components of the instrument together with the estimates of gains variables. In essence Chapter 6 reflects on the research question:

What is the student experience in Hong Kong (i.e. what are its qualities)?

In this chapter also, some conclusions are drawn about the differences in the student experience between Hong Kong and the US.

In Chapter 7, 'A more detailed analysis', the research question:

How does the student experience affect learning outcomes?

is addressed. From arguments that have been made in earlier chapters, it is suggested that here lies the essence of the quality of the teaching and learning dimension of a university's mission. In this chapter, the factor analysis of the estimates of gains variables is discussed in greater depth. The bulk of the chapter is devoted to the

presentation of the results of a multiple regression analysis. The variables in the multiple regression analysis are, principally, the latent variables which emerged from the factor analysis of the Estimates of Gains items (dependent variables) together with the Activity Scales and certain other related items (independent variables).

Chapter 8, 'Discussion of results' considers what the findings presented in the previous two chapters mean. It begins by considering the possible threats to the extent to which legitimate conclusions might be drawn. It goes on to discuss the relative contributions of the various explanatory variables. The chapter concludes that the results are relatively robust in terms of the overall purposes of the study. The final chapter, Chapter 9 'Policy Recommendations and Conclusions', sets out essentially a review of the study in terms of whether it achieved its overall objectives and its contribution in terms of overall knowledge in the field. A number of policy recommendations for university leaders and higher education policy makers are also set out. Finally the work concludes with some suggestions for further research in this field.

Throughout this work emphasis will be given to the production of practical recommendations for those involved in the higher education process. The study does not attempt to produce a theoretical causal model to explain how students learn. It is rather, a piece of 'policy research' which attempts to determine and discover actions that can be taken to improve the student experience so that learning outcomes can be better achieved and thus enhance quality.

Chapter 1: Higher Education in Hong Kong

Introduction

This chapter serves as a description of the higher education context in which the rest of this work will be set and the various factors which have influenced it. It discusses briefly the role of higher education in Hong Kong society and then goes on to describe the administrative context in which the Hong Kong universities operate and in particular its implications for the consideration of issues of quality. Some cultural and social influences which have helped to shape the higher education system in Hong Kong are also considered. The role that international and overseas-educated staff in the universities have played in creating a relatively unique system, is described. The chapter concludes with a brief summary of the various reviews of the education system, which are in process or have taken place in recent years.

The study of higher education in Hong Kong is a relatively recent phenomenon when compared to some other countries and systems. Like many developments in the Hong Kong Special Administrative Region of the People's Republic of China (SAR), formerly British Crown Territory (the Territory), the recent expansion of higher education has been extraordinarily rapid. In 1983/84 approximately 4% of the school-leaving cohort entered higher education (2000 students). By 1995/96 this had risen to 20% or 15,000 students. This six-fold increase was achieved in around 10 years. These figures are drawn from local university funding statistics and may actually underplay the real total since an unknown number of school leavers travel overseas to study each year. No statistics are kept about this group.

Higher education in Hong Kong has always been highly valued and supported by both the government and the general public. Entry to university is highly competitive. The newspapers carry stories or features about higher education virtually on a daily basis. Academics appear on radio and TV regularly. Higher Education stories often make the front page of quality newspapers. In the year 1994, for example the media extensively reported about the university Vice-chancellors and Presidents' selection processes in the different institutions. These stories ran in the news pages for weeks and even months. In the years 1995 and 1996, in the daily newspapers alone, more than 1500 articles were written on the various issues in higher education. The topics covered in these articles included a very wide range of concerns throughout the year about the University Grants Committee (UGC) funded institutions in Hong Kong. Broadly speaking, they included questions of major concern such as, funding debates; academic freedom; quality assurance and process audit in the universities; the problem of declining language ability of graduates; new university programmes and development; student union movements (especially in relation to university administration) and Hong Kong 1997 transitional affairs. There were also ongoing heated discussions about the Joint University Programmes Admissions System (JUPAS) in terms of its effectiveness in assigning students to their preferred choice of university and also of programme or course and also helping universities find the right students to fill their entry places.

The current (1999) topic of major interest in the newspapers is the perceived trend of the tertiary institutions to move towards a credit based or modular course structure. This question is discussed in the newspapers and on TV most days. Other current issues relating to university teaching for example, include the raising of the awareness of the use

of new technology in teaching; new ways to improve students' language ability; and developments of joint/exchange programmes with universities in China are all currently being discussed in the media. This is simply another demonstration or indicator of the importance which Hong Kong attaches to its higher education. In the west it is unlikely that such operational details of universities would ever reach the media in such volume.

The Higher Education Context and the Quality of Teaching

Hong Kong retains a system of higher education largely shaped by British and British Commonwealth ideas. Prior to 1984, Hong Kong's five million people were served by two universities of a model which would, in UK, be described as 'traditional' universities of the pre Robbins mould or 'comprehensive' universities in the US sense. These universities could trace their roots to the earliest part of the twentieth century. The government's decision to expand higher education massively in the Territory, resulted in the creation of one brand new university and three 'polytechnic type' institutions with a vocational mission similar to the institutions of the same name in the UK. Unlike their British counterparts however, the polytechnics in Hong Kong always had the power to grant their own degrees. Just as happened in the UK, the three polytechnics in Hong Kong were granted university title in 1994/95. The new university referred to above was slightly different. Built from scratch on a green field site, the Hong Kong University of Science and Technology (HKUST) adopted a US model of administration and teaching from the outset.

Thus at the beginning of this study, the higher education picture looks like this in Hong Kong:

- two ‘traditional’ (British Commonwealth type) universities: The University of Hong Kong (HKU) and The Chinese University of Hong Kong (CUHK);
- one ‘new’ university (US model): The Hong Kong University of Science and Technology (HKUST);
- three ‘former Polytechnic’ universities, Hong Kong Polytechnic University (Poly U), City University of Hong Kong (City U) and Hong Kong Baptist University (HKBU);
- one ‘university in waiting’, a liberal arts college offering degree programmes, Lignan College (LC);
- an ‘Open Learning Institute of Hong Kong’ based on a model not unlike the OU in the UK.

making eight university-type, degree offering institutions in total.

Until relatively recently, the people of Hong Kong and their elected (or, in some cases, appointed) representatives, have been happy to see significant percentages of the fruits of Hong Kong’s highly successful economy being invested in several new universities and the massive expansion of student numbers described above. The recurrent grant to the government funded institutions rose from HK\$4,600m in 1991-92 to HK\$8,200m, in 1994-95, a growth in real terms of 32% according to a recent government report (UGC Report, 1996, p 42). Few, if any, economies in the late 20th century could contemplate such a feat. But in the last 24 months or so, as the expansion reached its plateau, there are signs of sympathies cooling. Concerns about the amount and proportion of GDP being spent on higher education are being openly stated in the Press and highlighted by a

succession of politicians in the legislative chambers. Reviews of the way the education system is organised are also being conducted.

In examining the question of the quality in higher education, it is important to understand the administrative and management framework within which the Hong Kong universities operate. Like other higher educational systems, Hong Kong had begun to systematise or institutionalise consideration of the concept of quality and the closely related idea of standards. The assurance of the quality and standard of higher education in Hong Kong has traditionally relied primarily on the external examiner system, internal curriculum review and monitoring of entry qualifications of new students. These practices attempted to ensure comparability of academic standards within discipline boundaries and across institutions. These quality control procedures are perceived to have served the Hong Kong higher education system adequately for a long time, because the system depended heavily on elite, selective entry procedures and a high completion rate.

Unlike the UK, North America and some other systems, Hong Kong limits numbers entering tertiary education through a comprehensive process of progressively competitive standardised public examinations which begin at the very initial levels of primary school and continue through secondary school. Getting into the right school starting even at the primary level is believed to have a great effect on students' chances of climbing up the school ladder, onto the path of university education. As in the case with many Asian cultures, university admission is taken for granted as the single most reliable guarantee of social status, desirable career options and success in the future. (Yee, 1995) It is therefore worth pursuing even though competition is often keen and highly competitive.

Some concerns

The sudden expansion of first degree student numbers and programmes in Hong Kong (UGC, 1996) has widened the door of university admission. Allowing a much larger youth population to share the higher education experience provided by the government has changed the nature and dynamic of higher education in Hong Kong. The age participation rate for undergraduates has risen markedly. The elite system which once used to characterise Hong Kong's university culture, is no longer an appropriate description of the present situation. The effect of the sudden change in student intake among universities was not inconsiderable for university staff. Many express difficulty in adjusting to the new wave of incoming students. Employers also express concerns about the quality of new graduates, especially when there are reports on the steady decline of students' language ability.

In particular, the standard of English of many students leaving school entering higher education is felt to be inadequate and employers are dissatisfied with the competence in English of those whom they recruit.

(UGC, 1996, p169)

Undergraduate teaching therefore became a major concern for government, institutions, and departments throughout the Territory. Considerable amounts of time, effort and money were poured into developing ways to assess and improve undergraduate teaching. In 1993 the Executive Council (ExCo), one of the principal arms of the government executive, confirmed that the responsibility for monitoring quality assurance at the UGC - funded institutions should rest with the UGC (the University Grants Committee), a view which was supported by the institutions. Detailed guidelines were written to promote the

effective delivery and improvement of teaching. Teaching and learning quality process review and audit exercises became formalised practices among the institutions. (UGC, 1996) During the past few years, the provision of quality teaching gained a higher priority in terms of funding (but not such a high priority as research). Formal recognition of providing quality undergraduate education was repeatedly emphasised by the universities in their written mission statements.

Prior to this point however, it is fair to say that the goals and effectiveness of the higher education institutions had rarely been questioned. Some of the details have been discussed but not usually the overall direction and purpose. It is believed by many citizens that a higher education institution is the place to foster the development of verbal, quantitative and subject matter competence, cognitive skill, students' personal attitudes and value systems. It is where intellectual heritage is created and knowledge transmission in general takes place. It is also the place that friendships are formed which can last for a lifetime. In Hong Kong, as well as in China, great stress is placed on 'guanxi' – often translated as 'connections'. For many of the generation currently in tertiary education, these connections will be formed in the University rather than the tea houses. Bond (1991) describes this phenomenon thus:

...a broad category of persons to whom one is connected either directly or indirectly. Direct relationships include those deriving from school, shared residence, recurring economic exchanges, occupation, recreational activities and so forth. Indirect relationships are those with persons who are themselves associated with one's direct contacts. One makes these indirect relationships by 'pulling' on one's direct relationship ('la guanxi') with someone who knows the party one wishes to meet.

(Bond, 1991 p. 57-58)

However, to what extent can one substantiate these and other beliefs when there is little systematic scientific evidence to back them up? The massive and rapid expansion of degree level education in Hong Kong in the past decade has drawn public concern about the quality of university education as well as to the cost. Those involved in the provision of current university programs were urged to increase their efforts to ensure the standard and quality of university in a more formal and systematic manner. (UGC, 1996). It must also be borne in mind that the importance and centrality of tertiary education accorded by the people of Hong Kong is a comparatively recent phenomenon. Hong Kong has not taken the centuries taken by some western systems to consider and deliberate upon the role of the university or the purposes of higher education as a whole.

Since the development of a 'mass' higher education system in Hong Kong is a very recent phenomenon compared to other systems, it follows that there cannot have been many years available to study universities in the SAR. However even without a great deal of data, there are some educational phenomena which can be said to be generally held to be the case:

- the small number of tertiary education places available for so many years has made the secondary school system highly competitive;
- just as passing the civil service examinations was a sure way to improve one's social class in ancient China, so too in Hong Kong can examination performance matter;
- the school community is characterised by a number of important dimensions

- authoritarian teachers (arising from a Confucian role model which can be interpreted as equating teachers with fathers);
- many examinations which are based on testing memorised items;
- the need to master a complex ideographic language that requires much laborious practice;
- consequently, school education consists mainly of one way transmission of factual knowledge with students being highly passive and docile.

Although much recent work (see the discussion of the work of Biggs and Watkins in Chapter 3 below) shows that the notion of the Asian Learner as a wholly rote learner is mythical, the social forces described above are indeed at work in most Hong Kong schools.

The graduates of this school system, in increasingly large numbers, enter the local Hong Kong higher education institutions. The rapid expansion of local tertiary places has meant that those who had previously been unable to enter higher education, can now expect to do so. This has led to changed societal expectations and educational values.

Some influences on the higher education system

The original universities had always maintained a policy of recruiting staff internationally. Consequently, the expansion of the higher education system had to be fuelled in part at least by recruiting staff from overseas. Although a proportion of those hired came from traditional recruiting sources for the original Hong Kong universities, i.e. UK, Canada, Australia, USA, increasingly, many of those hired were Hong Kong Chinese

returning home from being educated in overseas universities. Further, in the years after the Joint Declaration yet prior to the handover of Hong Kong to China's sovereignty on July 1, 1997, there were noticeable increases in the numbers of local people who emigrated to other parts of the Commonwealth, particularly Canada and Australia. Many of these people, interested to some extent in obtaining a foreign passport, returned to Hong Kong. Many of these families or, in some cases, the children of these families, took the opportunity to obtain an overseas education, either at secondary or tertiary level.

There can be little doubt that these overseas imports, have contributed to the shape and character of the current Hong Kong higher education system. But the original universities, particularly the University of Hong Kong had long been dominated by commonwealth influences. Even a cursory glance at the Calendar of the University of Hong Kong reveals a host of British colonial influences – a list of vice-chancellors which, until very recently, contains no Chinese names; buildings called Sir Robert Black College; a curriculum and structure and partially bilingual language of instruction which could easily be that of a British 'civic' university such as Birmingham or Manchester complete with medical school in the same vein. The other original university – the Chinese University of Hong Kong – had attempted to embrace other values, Asian and particularly, Chinese values through its college structure and particular emphasis on the scholarship of Asian subject matters. Even its very name, the Chinese University of Hong Kong itself reminds us that its 'chineseness' is something that its sister university, the University of Hong Kong is not.

But, despite its greater use of the Chinese language and the other attributes described above, the structure and model is essentially British, or at least commonwealth. Like the

University of Hong Kong and major commonwealth universities there is still a vice-chancellor, a Senate, a Calendar. In other ways, the Chinese University of Hong Kong was essentially built on the colonial model but with a Chinese face and more Asian values. Like its sister university CUHK has an international faculty drawn from the same places.

Thus, even before the great expansion took place, the existing higher education system had been characterised by a number of influences foreign to Hong Kong. It was only natural therefore that the ideas which shaped the new universities drew also on the experiences of the staff hired from overseas, or who had been exposed to higher education in other countries.

Review of the education system

It will be apparent from these discussions that in recent years various concerns have been expressed about the education system including higher education. Certainly the quality issue seems to have dominated the agenda for much of the 1990s. Whether this concern was imported solely via staff-educated overseas or whether it is part of the public management phenomenon sometimes called 'the new managerialism' which governments in the west have been embracing is not clear. In one sense, that does not matter. For higher education in Hong Kong the 1990s have been marked by the rapid expansion of the system from an elite system to a mass system as described above and this in turn brought concerns about standards and quality.

One other feature of the 1990s particularly in the last few years, has been the number of reviews of the education system, particularly higher education, which have taken place. A series of reports have culminated in the publication in December 1999 of a major consultation document 'Learning for Life' (Education Commission, 1999). This report proposes radical reforms of the whole education system including higher education.

Among the proposals are:

- preparation during higher education for lifelong learning;
- creation of post-secondary colleges;
- fully transferable credits;
- broadening the first degree beyond the classroom;
- establishment of private universities.

Not unsurprisingly, the publication of this paper has caused an excited debate in the media. In particular, the focus of most attention has been the question of flexible credit transfer between the universities and whether such a system will allow students to move into the 'elite' universities. There is talk in the newspapers of promotion into good universities and demotion out of them for poor performers.

Summary

In this chapter, some of the background issues have been discussed which will affect the context in which the rest of this research will be conducted. It was noted that, in Hong Kong, higher education has a relatively high media profile. The comparatively short history of Hong Kong's higher education system and the colonial influences, which

shaped it, were described. The importance of the policy of expansion of the higher education system thus transforming the system from elite to mass was noted. This in turn led to concerns about standards and quality. Some additional influences on the system arising from Confucian values were pointed out. The chapter also set out a brief discussion of the role that international faculty play in influencing the system.

Chapter 2: The Quality Assurance Literature

Introduction

This chapter presents a discussion of the literature on quality and quality assurance in higher education, the majority of which emanates from the UK and other parts of Europe. Various aspects of the quality assurance literature emerge particularly the difficulty in arriving at any commonly agreed definition of quality. On the other hand, many different quality assurance mechanisms and systems appear. The industrial concept of TQM is discussed. Finally, a relatively simple notion of how the definition of quality might be dealt with is described. The chapter begins with a discussion of how the relevant literature on this topic might be organised.

This area of study does not possess a corpus of literature which falls neatly into a single category that takes up two or three shelves in the institutional library. In the previous chapter we have drawn from literature categories as diverse as Chinese culture, public policy, and educational psychology. There are various ways in which the relevant literature might be organised – by topic; by geography of sources; by deduction (moving from the general to the specific). Each method would have its merits and demerits.

As soon as one attempts to survey the literature on the quality of the students' experience of higher education, one is struck by the variety of the diverse collections of literature sources. As mentioned above briefly, there is a large volume of work from North America on what might be usefully summarised as the 'college impact' literature. In the UK the (arguably more limited) sources of work are less easy to categorise. Some of the

relevant material is to be found in what might be called the 'quality assurance' literature. In some other countries such as Australia, New Zealand and, notably the Netherlands, in Europe, again there is a strong quality assurance dimension to the relevant literature. Nevertheless it does embrace some aspects of the student experience, notably the impact of teaching. Arguably there is a third category of literature which is not limited geographically and that might best be called the 'student approaches to learning' literature. These works examine, primarily from a psychological standpoint, the approaches which students adopt and which have most desirable effects in terms of student learning.

The literature review that follows is organised principally by topic and sub topic. This chapter deals mainly with what can be called the quality assurance literature. In the last chapter it was explained that many of the 'quality' themes prevalent in some western higher education systems have been imported to Hong Kong. Later chapters deal with the student approaches to learning literature and the college impact literature.

Problems of Definition of Quality

The quality assurance literature considers the concept of quality in higher education and how that quality might best be assured. As was noted earlier, there seems to be no universally accepted theories or models about quality and so, much of the work concentrates on the processes and procedures used to ensure that a given level of 'quality' (whatever that may be) is reached. In much of the work, the key terms (often including quality itself) are ill-defined and, because of this, it is sometimes difficult to deduce exactly what the author means by quality or the conceptual frame of reference being used.

On many occasions, it seems that a number of questions are being begged. The literature does not address directly, the question being investigated at this stage of this study i.e. what exactly is quality in a university and where does it lie? Instead, much of it focuses on quality systems, quality mechanisms, perspectives on quality and even higher education management. Nevertheless, it is considered to be essential to review all of the dimensions of this literature to try to find clues to allow us to answer key questions. First of all what does quality actually mean? Secondly, the quality of what? Is it resources, processes, output, students, organisation management, learning outcomes, the discipline or the course? The quality assurance literature tends to be organised in terms of the different methods for evaluating or assuring quality. It is believed that this is the only reasonable way in which the literature can be examined in order to try to find out more about what quality actually is and how it can be maintained or even enhanced.

As was noted earlier, the complexity of the definition of quality in respect of the different purposes of higher education is well-documented (Barnett, 1992, Fraser, 1992, Goedegebuure, Maasen and Westerheijden, 1990, Harvey and Green 1993, Harvey, 1993, Van Vught 1988). There are also different interpretations of the purposes of higher education. A different interpretation may mean a different intention for quality. The definition of quality itself is also subject to different interpretations. Harvey and Green (1993) discuss many possible definitions of quality. In simple industrial or commercial language, quality means the checking of standards. If the traditional elitist approach to higher education is used, then quality seems also to mean excellence or exceeding a high standard. If higher education is seen principally as a producer of highly qualified manpower, then quality is measured by how successful graduates are in the workplace. If higher education is regarded as the training for a research career, then quality may be

operationalised by the research profiles of the staff. If higher education is considered to be about efficient management of the teaching provision, then broadening access to higher education is important and it would be appropriate to adopt performance indicators such as staff-student-ratios (SSR), and non-completion rates which measure student throughput and efficiency. Quality, they argue, may be defined as value for money. Quality may also mean 'fitness for purpose' or be defined as 'transformation' or 'value added'. These later definitions relate to the notion of higher education as a process, a concept which will be considered again later.

The crux of the issue is that the quality of a product in industry is dependent on the clear definition of the product itself. It is suggested that services are more difficult to define than products, and in the case of higher education, this is even more problematic because the point of delivery is not clear. A degree programme constitutes a learning experience that usually takes three years to complete and involves a complex process of the interaction between academic staff via a curriculum in a university environment and students.

So in brief, although quality in the context of higher education is pervasive its meaning is also elusive. It can also be seen as a relative concept, defined in relation to a set of goals. It also seems to be multi-dimensional and multi-faceted in nature (Harvey and Green, 1993).

There are those who argue that the definition or meaning of quality depends also on what it is being 'done' to quality, (eg. assessed, audited, enhanced and assured) and also by whom. An important question relating to quality assessment of higher education is:

What is going to be assessed in quality assessment depends on who will do the assessment.

(Westerheijden, 1990, p.187)

Governments set the boundaries of the development of higher education in response to, and in anticipation of, societal needs while a higher education institution will assess its mission and resources to decide which programmes to offer. The government's goals may be related to macro-economic efficiency. Institutional goals are, in general, defined in broad terms and there is frequent goal shift or displacement due to changes in the context of the organisation and pressure from government and society. At individual member of staff level, standard is rooted in the evaluation system or in the tradition of the discipline. In brief, there are different stakeholders in higher education and each may have different goals. So their definitions of quality may be different. Thus:

Quality assessment has to operate in a complex organisational environment where different actors have different objectives with respect to quality assessment and where it has to compete with other goals and interests of all actors who are involved in higher education.

(Westerheijden, 1990, p.189).

If this argument is correct it will be very difficult to settle upon a single concept of quality to suit all purposes and all perspectives. The different participant groups will have different goals thus their conceptions of quality will differ. This study concentrates on what has been defined as the teaching and learning purpose of a university mission. In the quality assurance literature, it is found that Barnett (1992) concurs that higher education has several purposes:- as production of qualified manpower; as training for a research career; as extending life chances and as the efficient management of teaching provision.

These different functions may well (as has been argued from the outset) require different concepts of quality. Even within the teaching and learning function there emerge other problems with approaches to quality and its assurance. Some of these relate to the methodology by which quality is assured.

In a recent work based upon research carried out in an institution in Hong Kong, Pounder, (1999) questions whether quality is a concept which can usefully be applied at institutional level at all. He argues that there is no widely accepted definition of quality and that universities play many roles. Thus, a single concept of quality is of limited value when considering the performance of the higher education institution. Thus quality should be considered in other parts of a university (e.g. course level) but not at institutional level where it is rendered meaningless.

Approaches to Quality Assurance

Harvey (1993) in discussing approaches to quality assurance of higher education pointed out several important questions which had to be faced:

- which aspect(s) of the education system: inputs, processes, or outputs, is the major focus of attention ?
- the extent to which quality assurance is internally or externally controlled;
- whether the system of quality control and assurance is implicit or explicit.

An examination of Harvey's more detailed discussion of the processes of quality assurance provides useful insights into this complex concept.

The first question to be considered by Harvey (1993) is which aspect(s) of education: inputs, processes, and outputs, should be the focus of attention. Ideally, he argues, quality assurance should cover all the three stages of the system. Input quality can be controlled by upholding standards of quality in various aspects of the system including staff quality (via staff qualifications and research production); student quality through entry qualifications and student selection and an acceptable level of physical resources. While a higher education institution controls input by stipulating the level of student entry scores, it is not ultimately responsible for the lowering of input quality should it occur. Output quality can be controlled by upholding a threshold exit standard through student assessment. In industrial terms this is a typical 'end of production line', final checking mechanism.

Higher education is about the education of students' minds. This includes their initiation into areas of academic knowledge, and the development of a student's integrity, general knowledge and intellectual abilities as well as acquiring subject knowledge. While it is possible to measure the attainment level of students at the end of an education process, the argument goes on to suggest that the result does not imply that there is a link between process and output. It is not easy to have quantitative measures to evaluate how the process of education relates to the output. Nevertheless it is still essential for a higher education institution to be accountable for the process of education because it is the one part for which a higher education institution is mainly responsible.

It is difficult to accept the argument that there is no necessary link between the higher education process and outputs, otherwise what would the point of higher education be? Whilst one can see that it is difficult to isolate that one particular variable, surely it is reasonable to accept that the process does cause some effects in terms of outcome. This question will be considered again later in different contexts.

Although many studies conclude that the education of a student is a black box and that there is no single common response among students, in other words no guarantee of an expected level of result, a higher education institution cannot deny that it is ultimately responsible for the process part of higher education because it is the only part which takes place within the higher education institution itself. Hence, it is important for a university to be able to demonstrate to the public that it is doing the utmost to provide a course of education that is of an acceptable standard and quality. Evaluation of course design, delivery and the environment appears to be one possible answer. (Barnett, 1992).

Two other basic issues raised by Harvey (1993) are whether quality assessment should be externally or internally controlled and whether quality assurance is best maintained through an explicit system or through implicit values of staff as discipline specialists and professionals. According to Williams:

quality assurance procedures that are externally imposed are more likely to be seen as regulations to be reluctantly complied with and evaded where possible.

(Williams, 1990, p.78)

He argued further that,

quality is better assured if those who deliver higher education services have a sense of direct ownership of the quality assurance procedures both individually and institutionally. A course team which takes its own decisions to improve a course which is receiving adversely critical feedback from students is likely to respond more quickly than one which receives the same criticisms from an external funding or accreditation agency.

(Williams 1990, p.78)

It would seem that whilst this may represent an erudite discussion of a system to assure quality it remains frustratingly difficult to understand fully what is being meant by quality.

Another assumption is that a system with few external controls will be more flexible and able to respond more quickly to the changing needs of employers and students (Harvey, 1993). Internal control means that the institution has primary responsibility for the courses and programmes offered. Most traditional universities are characterised by implicit quality assurance which means that academic staff are entrusted with the right and responsibility to uphold quality of the subject discipline. In the UK in the 1970s and 80s, the polytechnics were required to use explicit quality assurance systems to testify to the standard of their programmes.

Becher (1989), in discussing the issue of quality assurance, warned against the danger of standardised evaluation systems which lump different departments and subjects together and take little or no account of the variety of epistemological characteristics which different disciplines may have. He argues that too forceful an imposition of the extrinsic values of accountability and quality control could only lead to intellectual subservience

and thence to academic sterility. He prefers to promote mutual judgement by informed specialists because only masters in the field are capable of making authoritative appraisals. Rather than relying solely on formal structures and procedures, the informal contacts and personal relationships between university and college staff are important. Internal control supported by an implicit system is regarded by him as a much better approach to assuring quality. The question which must be asked however, is whether such a system is acceptable in the spirit of the 'new managerialism' and the move away from an elite higher education system.

In fact as Van Vught (1988) has pointed out, neither the extrinsic system which is utilitarian nor the sense of excellence which is intrinsic among academics should be ignored. He suggests that there is a need to balance the intrinsic and extrinsic aspects of the assurance of quality in higher education. The quality assurance literature seems to say a great deal about systems and procedures and even perspectives but still the definition of key concepts is elusive. The various discussions about the desirability of an external or internal (in institutional terms) perspective does provide some illumination of the main question i.e. where does quality lie. The object of the evaluation of quality or the quality assurance mechanism lies within the institution itself during the period when the higher education process takes place. Although the literature does seem to contain considerable preoccupations with the perspective of the evaluator, it would seem that the object of evaluation remains the same quality (albeit still elusively, poorly defined). All of the discussions seem to place the higher education process at the heart of quality.

The quality assurance literature also deals with notions of quality and accountability. As noted earlier, the expansion of higher education implies that an increasing amount of

public funding is required. Higher education institutions are increasingly required to be accountable and be able to show to the public that they are producing graduates worthy of the cost. Higher education institutions therefore need to establish processes which help to demonstrate their accountability to their clients (Goedegebuure, 1990). Accountability is the keynote of government-higher education relations and in this respect, a clearly identifiable quality assurance system is essential. Williams and Loder in their discussion of quality assurance put it succinctly as follows:

In a market oriented system of higher education, particularly one in which the government continues to be the main purchaser of academic services, quality assurance mechanisms must be explicit rather than implicit. That while individual professional integrity must remain the cornerstone it should be supported by suitable institution-wide and system-wide procedures and that individuals and institutions should be able to demonstrate their commitment to maintaining and raising the quality of their work in a manner consistent with their recognised objectives.

(Williams and Loder, 1990, p. 5)

So despite the emphasis in this literature upon the mechanisms and protocols for assuring quality there continue to emerge signs that quality relates to objectives and to the higher education process.

Williams (1990) when discussing quality assessment pointed out that, increasingly, external accreditation agents focus on the review of the effectiveness of the quality assurance system adopted by the institution and the object of the assurance. Most external assessors want to be convinced that the quality assurance mechanisms and procedures actually operate in practice. In reviewing quality assurance systems, most external assessors want to be reassured about the following:

- *explicit statements of ways in which quality will be monitored and assured within courses;*
- *suitable procedures for discovering and interpreting the responses of students to courses and mechanisms for feeding the information back into subsequent course development programmes;*
- *effective use of process indicators to demonstrate that the institution can diagnose and treat problems as they arise;*
- *evidence of a willingness to listen to and act upon information coming from employers of the institution's graduates;*
- *suitable criteria and procedures rigorously followed for the introduction of new courses;*
- *regular review procedures for existing courses to ensure that criteria that were met when the course was established continue to be met and that there are appropriate procedures for authorising modifications in courses; that procedures for the selection of external examiners are likely to be properly objective; that there are explicit procedures which ensure that external examiners are able to exercise functions of independent peer review as well as moderation of examination marks and mechanisms to ensure that reports and recommendations from external examiners are fed into the formal decision making machinery of the institution.*

(Williams, 1990, pp. 78-79).

It is important for external agencies to ensure that suitable mechanisms are in place which will enable institutions to identify quality weaknesses and to act upon them quickly.

Once again the higher education process is at the heart of this notion of quality.

It would seem from the literature that other fundamental questions of academic quality assurance are, whether the system is an evaluative snapshot or is assurance oriented with continuous review which facilitates improvement; whether the system is end of line inspection or continuous quality improvement; whether it aims at improving quality or accounting for quality; and whether it is intended to achieve quality assurance or comparative quality judgement. (It would seem that each of these depends, crucially, on the definition of quality being adopted.) The dichotomy is succinctly described by

Terenzini (1993) as the problem of 'assessment as accountability' versus 'assessment as learning enhancement'. In the USA, the term 'assessment' is broadly synonymous with 'quality assurance' in the UK and Europe. This paradox would suggest that the definitions of quality being used to underpin such contradictory notions must be diverse.

Barnett (1992) also pointed out that evaluation of quality could be either summative, or developmental and formative, in nature. In general, summative evaluation of quality tends to give greater weight to goals which are measurable than those which are not.

Quantitative assessment outcomes are often used for control and measurement purposes in order to take decisions for planning and allocation of funds while qualitative assessment is often used to influence and improve quality. Quality assurance in fact should be a cyclical process. If quality assurance is to be effective, the system must include three components: measurement, monitoring and improvement of the educational process. The monitoring mechanism must serve as an early warning system to trigger comprehensive assessment of the causes of deficiencies that are discovered. The monitoring and improvement aspects of most quality assurance systems however are underdeveloped (Dochy, Segers, and Wijnen, 1990).

Another problem which is widely discussed in the literature is the standardisation of design and measures of quality assurance procedures versus the flexibility accorded to staff and departments on an individual basis. This relates to the fundamental question of centralisation versus decentralisation of responsibility and authority for quality assurance. Centralisation may stifle creativity yet unrestrained decentralisation may also have the undesirable effect of lack of control and lapse of standard (Terenzini, 1993). Finally, if quality is linked with funding, the dichotomy of view between academic and

administrative staff will intensify. It will increase the power of administrative staff at the central level vis-a-vis academic staff. Westerheijden (1992) is of the view that any policy context of centralised resource allocation based on bureaucratic procedures is an impediment to a policy which aims at raising the quality of education and research and at more permanent quality care in the higher education institutions. This issue raises questions about the notion of quality and who 'owns' it. Once again the term must be defined before these questions can properly be answered.

Despite differences in the status of the various quality assurance agents and systems practised in different countries, and the scope of their operations and the focus of attention, there are a number of common features among them. Almost all quality assurance procedures require a self-assessment of the effectiveness of the **process** to meet **objectives** by the course team or the institution. The self-assessment is often documented and the documentation forms a base of review and discussion between the course team and the review agent. Secondly, most evaluations contain statistical reports or performance indicators and sometimes judgement and decision are based on the statistical data. Finally, peer evaluation is used and this normally takes the shape of a validation or institutional visit (Van Vught, 1988, Kells, 1992).

Barnett (1992) in discussing quality assurance in higher education, emphasised two key aspects of quality maintenance: critical self-reflection by those involved and direct dialogue between staff and their peers in the wider community. The self-study document he argues, is the pivot between internal and external quality assessment. He further suggests that the document has threefold purposes: to stimulate internal quality care; to

internally prepare academic staff for the visit by the visiting committee; and to provide basic information for the visiting committee. Self-study is important because:

Evaluators from outside cannot explore the quality of an institution or a programme at any depth unless those responsible for conducting the programme have analyzed and assessed them themselves.

(Van Vught, 1993, p.137).

The use of self-assessment as quality assurance reflects the conviction within higher education that the most reliable safeguard of quality and standards is not external control, but the development of the institution as a self-critical academic community. He argues that faculty must constantly review the effectiveness of the processes. The major difficulty with self-assessment is that it is subjective and often lacks rigour. What is not clear from this is whether the student experience is primary object of the critical self-reflection.

It may be appropriate to pause at this stage to reflect on what has emerged so far. Tentatively, one might suggest that the literature seems to be driven by quality assurance forms and protocols rather than principles or philosophy. This may be because of a seeming reluctance to define quality for the purpose being discussed. Whilst it is perfectly acceptable for there to be competing definitions of quality, even for the same purpose, it is not helpful to be relatively silent about the definitions being used even although the focus of the writing may be on the mechanism. In those writings which do attempt to deal with the definition of quality as a concept two ideas seem to recur. The first is that quality relates to the higher education **process** and the second is that quality cannot be divorced from the objective or purpose of the activity. As indicated at the

beginning of this chapter, this literature tends to focus on mechanisms and it is around quality assurance mechanisms that it must be organised even though that is not central to the scope of this enquiry.

Peer Review as Quality Assurance

The literature discusses at some length the concept of peer review as another commonly used quality assurance tool. The external examiner system is cited as a traditional form of peer review. Its limitation is that it relates only to the subject components and to standards of assessment. As pointed out by Reynolds:

An external examiner system may be able to offer some guarantee of standards at course level, but it has little to contribute to assessments of quality at the institutional or system levels.

(Reynolds, 1990, p.23).

Nevertheless, the external examiner system is attesting to the standard and quality of educational outcomes. What of the wider student experience? If Reynolds is right the external examiner does not help here.

The use of evaluation panels in course validation and institutional accreditation is another form of peer review which is discussed. The evaluation panel has a dual role to play: as a peer group offering advice on improvement on the process and as a control agent entrusted with the right of judgement and accountability. The panel, based on a self-evaluation document, visit the university and conduct a dialogue with academic staff, students and sometimes potential employers to form an opinion of the programme in

terms of content, process, organisation and management of the programme, and standard of the graduates. The panel also makes suggestions on how to improve the quality of the course and sometimes decides if the course is up to a required standard and therefore fit for operation. Often the evaluation panel is the executive agent of the funding body as in the case in Hong Kong of the role of HKCAA (Hong Kong Council for Academic Accreditation) to the UGC. The panel's mandate comes from the fact that it is entrusted with accountability to the professional body or funding body for ensuring that the course outputs meet the requisite standards. Its judgement may also legitimise the internal quality assurance and management of the department to the institution and the institution to the government.

This peer review system, though frequently practised, however, is not without its problems. First of all the definition of 'peer' is open to question. Peers may mean outstanding experts in the field, fellow professionals, subject specialists, colleagues or representatives from industry or the market. There is also the question of how 'peer' they are. Hence it is important to have a good selection system and confidence in the judgement of the committee. Secondly peer review is basically a 'referee' system based on human judgement. Judgements are made by peers who are reputed to possess sufficient expertise. The norms and criteria they use in their judgement are the canons of the methods and subject matters of 'good science' that are dominant in a particular discipline. These norms are not explicit and inter-subjectivity is not high. There is also no absolute standard in the minds of the evaluation panel. Their judgement is made through dialogue and exchange of views with the course team. There is also the problem of social bias. Conclusions of the evaluation panel may not so much be based on judgement of the product or process but on the reputation of the institution or the people

involved. In other words there may be intellectual bias and random error because there is no agreement on the acceptable level of quality (Barnett, 1992).

In short, evaluation by peer judgement has high content validity but low reliability. It has the problem of subjectivity, unreliability, social bias, and inconsistency in judgement. Furthermore, peer review and visits may be self-serving, especially if subject specialists predominate the panel (Van Vught 1988). Therefore peer review that leads to quality judgements without any inter-subjective basis in performance indicators is not accepted in the context of large scale quality assurance (Westerheijden, 1992). Although some prominence is given to the notion of a peer review system in the literature there remains no clear discussion of the legitimate area of review. Do the terms of reference focus on the appropriateness of the process in bringing about outcomes? Peer review is usually programme or course based and thus may not be able to attest to the quality of the process overall.

Another popular quality evaluation tool which emerges from the literature is the so-called performance indicator. There are many types of performance indicators including empirical, quantitative and qualitative data that point to an institution's goal achievement. (Dochy, Segers, and Wijnen, 1990). The main purpose of performance indicators is to 'inform'. However, some argue that quality assurance numerical descriptions tell little about the educational process of a higher education institution. They indicate where performance differs, but not necessarily why it differs, or how to improve it (Dochy et al, 1990).

Another problem discussed is that different users of performance indicators have different objectives and goals. Different performance indicators may not have consensus and there is also the problem of transforming performance indicators into standards. There must be clear objectives regarding interpretation of each performance indicator. Hence, performance indicators can be part of a peer review but should not be the only base of evaluation (Vroeijerstijn, 1993). There is also the danger of performance indicators taking over and diverting higher education institutions from their essential values and purposes (Barnett, 1992). The merit of the performance indicator is that it has some content validity, which means that the performance indicators can be measured and interpreted in a reliable and correct way (Dochy et al, 1990). Most performance indicators are only concerned with efficiency such as cost per student and student employment rate. There is however a general lack of appropriate performance indicators to assess quality of the student experience. In other words there is high reliability in performance indicators but they are low in content validity. It would seem that there is some agreement among those who criticise performance indicators that they do not focus enough on process.

Validation appears in the literature as a common form of course quality assurance mechanism. It combines several of the above quality assessment tools to create a more comprehensive review of the quality of a course. Typically a validation exercise consists of the following components:

- a self-study document analysing why the introduction of the course is justified or reviewing the operation of the course in the case of revalidation;

- evaluation by a panel/visiting committee which consists of subject experts and members from within and outside the institution;
- a meeting between the evaluation panel and the course team and sometimes supplemented by a meeting with students, and visit to facilities;
- an evaluation report of the panel and its findings with a number of conditions for approval or recommendations for the course team to consider;
- implementation of recommendations made by the visiting panel.

It is not clear from many of the discussions exactly what the subject or content of the validation exercise is. Once again the discussions tend to focus on systems rather than objectives or content. The contents of the self study and the evaluation agenda may not necessarily focus on the main process issues. Validation remains one of the most common forms of quality assessment in Hong Kong.

The literature also considers the system of accreditation. Accreditation is very similar to validation. It is a process in which an external body judges the level of quality of one or more specific programmes of a higher education institution using pre-stated, clearly defined standards and a process of evaluation which combines self-study and peer review. Professional accreditation is more concerned with course content rather than other indicators of quality. Its purpose is to ensure that certain courses fulfil the criteria of producing the types of graduates that the profession desires and worthy of a licence to practice. It is not concerned with the quality of the student experience (Loder, 1990). Once again systems predominate but content or process does not.

Quality and Universities as Organisations

Some writers consider the organisational nature of a university and how that affects the approach to quality and even quality itself as a concept. In his analysis of the characteristics of a university, Van Vught (1988) pointed out that a higher education institution is characterised by organisational fragmentation. These characteristics of the organisation affect the approach to quality. Typically, a higher education institution is built up of 'knowledge areas' which are building blocks of the organisation. This 'pigeoning' of isolated programmes minimised the need for co-ordination across tasks and maximised the discretion of specialists who carry out these tasks. Hence, a higher education institution can be described as a loosely coupled system of knowledge cells. It is a federal system with semi-autonomous units/departments which pursue distinctive self-interests. Loose confederations of academics render it difficult to maintain central administrative direction and control because the attitude of some academic staff may be parochial in that they tend to see themselves as professionals and therefore emphasise academic freedom resisting central administrative control and checks. Often, their main commitment is to the discipline group or professional group rather than to the higher education institution concerned. So, the management of a traditional university is characterised by extreme diffusion of decision making power with authority located at lower levels of the organisation. University leaders have only a limited capacity to guide their organisation. Professional autonomy prevails with academic professional experts asserting their authority over decisions on teaching and research (Van Vught, 1988).

In fact the academic sector of a university has some of the characteristics of a community with a certain degree of democratic governance. Members of the academic community, are all experts in a specific area, and thus expect and even demand to be respected for their expert knowledge and to be free from interference in their personal operation. In other words, academic freedom is fiercely guarded. As experts, they also expect to be heard in the running of the organisation. The collegial management approach with collective decision making by the entire academy harks back in the UK to the early Oxbridge tradition (Baldrige, 1971, Bess, 1984). From this discussion it might be implied that concepts of quality may vary within an institution. If the individual academic is central then there may be as many definitions of quality as there are members of staff.

As described earlier, with the emergence of mass higher education, higher education institutions are increasingly expected to be cost-efficient and effective in order to be accountable to the government and to the public. The increasing costs of higher education has to be legitimised by clearly definable societal benefits. Extrinsic mechanisms and procedures of quality assurance are regarded as a guarantee of the quality of academic programmes. Decreases in funding also have an impact by influencing changes in the management structure of a higher education institution. Many universities saw a need to be more entrepreneurial and to move from the traditional collegial management to a tighter form of management which facilitates central planning and control. Inevitably this will affect some forms of quality.

In the quality assurance literature considerable attention is paid to university management issues. Perry (1990), in discussing the issue of management of a higher education

institution pointed out that in order to be able to account for every detail of its operation, good management is essential to universities or colleges. Among other things, good management includes the establishment of an effective internal system of quality control and the building up of an ethos of quality within the institution. She argues that senior management should ensure that within the institution there are adequate structures for setting appropriate goals, and communicating these throughout the institution as a marker against which each individual can judge their own performance. The administrative sector must work together with the academic sector to form a 'quality ethos'. (Perry, 1990) Perry does not accept that there needs to be a dichotomy between administrative and academic sectors. She believes that both sides should cooperate, otherwise, one would run the risk of either allowing administrative efficiency to destroy the academic ethos of higher education, or alternatively of allowing academic attitudes and practices to distort and nullify any improvement in management effectiveness.

It is within the quality of the management, and the ability of those who manage, especially at head of department level, to give widespread ownership of goals, and an ethos of quality control, throughout all the activities of the institution.

(Perry, 1990, p.21)

Thus institutional managers must lead by emphasising the objectives of the activity (say teaching and learning) and emphasise that quality lies in the process.

TQM in Higher Education

The call for effectiveness and cost-efficiency means that higher education institutions have to embrace some of the contemporary theories of management. Some works from

the quality assurance literature take their theories from the management of industry and speak of 'total quality management' (TQM) which adopts a holistic approach to the commitment to quality (Gilbert, 1992, Geddes, 1993). TQM has proved to be of some importance in bringing about major transformations in many organisations. In brief, its key concept is process-oriented; aims at continuous improvement; is customer focused (meaning it emphasises the role of the customer as the arbiter of quality); emphasises transparency; and strives for employee involvement. On the face of it, this philosophical approach seems to bode well for the student experience of higher education, but further consideration will be required.

TQM requires a team approach which emphasises team building and the facilitation of continuous improvement. Gilbert (1992) suggests that commitment to quality is total and totalitarian which means that a culture of quality permeates the whole organisation, starting with total commitment at senior level. Continuous improvement is achieved through a planned, systematic, and unrelenting commitment to quality improvement in everything it does.

Quality improvement, in short, becomes everyone's business, from the chief executive down. Genuine responsibility must be given to all employees in all the workplaces of the organisation, and the challenge of developing and implementing plans for the systematic improvement of work processes must be taken up by all. The essence of a TQM organisation is a strong and ubiquitous quality culture that embraces all levels and indeed all members of the organisation, and focuses their energies on the challenge of open-ended continuous improvement.

(Gilbert, 1992, p.33).

A key factor is that TQM is about empowering the participants and controlling the entire organisational culture by devolving power, accountability and responsibility to constituents. This may conflict with the notion of institutional leadership discussed earlier. On the other hand it may have certain similarities with the intrinsic quality assurance systems suggested by Becher (1989).

It also emphasises quality control with careful monitoring of quality improvement and process improvement, recognising that individual error is rarely the primary cause of waste and inefficiency. A TQM proposition is that:

If you can't measure something, you can't understand it. If you don't understand it, you can't control it. If you can't control it, you can't improve it.

(Gilbert, 1992, p.35).

At a glance, the concept of TQM appears to suit the need to revamp the management of a higher education institution, even to focus constantly on the student experience, but the definition of quality is still elusive. The focus on customers' requirements provides a healthy counter-balance to the traditional producer dominated culture of the education sector. TQM's preoccupation with quality and emphasis on measurement and monitoring of systems seems to tie in well with the emphasis on quality assurance of higher education. This holistic approach to managing quality and the collegial culture of a university community as a collection of professional academics is similar to TQM's emphasis on continuous improvement and employee involvement. Everyone in the organisation becomes a custodian of the organisation's mission and goals and above all the quality of its services (Timmers and Mennes, 1993).

Geddes (1993) argues that, notwithstanding the above, TQM cannot simply be borrowed from industry and commerce. While higher education institutions should look to the service sector for models, it should be noted that education is not a service for a customer, but an ongoing process of transforming the participants. Furthermore, the anti-managerial culture in a university renders it difficult for a higher education institution to fully adapt TQM to the management of the institution. Geddes (1993) in discussing the application of total quality management to higher education, further pointed out that quality cannot be imposed from above and he argues that quality improvement will only happen if all staff feel they want it to happen. This view is supported by Van Vught (1988) who pointed out that it would be a mistake simply to transfer industrial management approaches to higher education institutions as it may violate some of the basic values of higher education. Instead, institutions should combine professional autonomy with collective decision making. An initial step is to develop the self-steering potential and creative capabilities of their professional members.

Attempts to adapt TQM to quality assurance in higher education demonstrated that top management are not the ones who should control the quality of education according to Timmers and Mennes (1993). Quality control should be delegated to those directly involved. They should be empowered to take decisions of their own in respect of quality. Senior managers therefore should not attempt to control but to create conditions to enhance the continuous development of quality. The job is one of climate creation.

A collegial community cannot be mobilised simply by management fiat or executive leadership. Empowering such a community means facilitating the involvement of all members at all levels in the making and implementing of key decisions.

(Gilbert, 1992, p.38)

As Hardy and Mintzberg have pointed out,

Change in the professional bureaucracy (such as universities) does not sweep in from new administrators taking office to announce major reforms, nor from government technostucture intent on bringing the professionals under their control. Rather, change seeps in by the slow process of changing the professional.

(Hardy and Mintzberg, 1984, p.83)

The TQM concept as it emerged from the literature began well in respect of the likely focus on the student experience. The idea of all pervasive, continuous improvement is seductive, as is the idea that quality is everyone's responsibility. But the main problem is that it is still not clear what quality is. There are hints in this part of the literature that it lies in the organisation's mission and aims. This would seem to confirm the idea that the quality of a function (or objective) of a university must be determined in relation to itself alone i.e. the quality of learning lies in the achievement of appropriate learning outcomes. However it is the control dimension that seems to be most worrying and the lack of emphasis on the identification of quality with the clear definition of the objective of that part of the process.

Lindop (1985) in his report on academic validation pointed out that if quality education is to be promoted successfully, higher education institutions need to have the appropriate structure, management approach and staff attitude and beliefs. The most reliable safeguard of standard is not through a system of external control but the development of the institution as a self-critical academic community and an environment which promotes desirable learning outcomes.

Barnett (1992) also said that the process of quality assurance in universities occurs less in formal interactions established for that purpose than as tacit aspects of the internal collegial life of the university. This view is echoed by Frazer (1992) who argues that quality control is not sufficient to ensure success. The overall quality of a university must be the concern for everybody involved. This view is shared by many other theorists on higher education quality who believe that quality is most likely to exist when those involved are part of an on-going process to promote it. The essential requirement is for evaluation to become part of a continuing process of critical self-reflection of the process rather than simply a spasmodic response to external demands. It is therefore important to have ownership of the quality assurance system. Sizer (1987) argues that to achieve the above, one needs to create an institutional culture rooted in quality.

Sizer (1987) further pointed out that,

... there should be a process of accountability to students, employers, funding bodies, government departments and the public, which starts at the level of the individual lecturer, through heads of departments, to the Vice-Chancellor or Director, to provide assurance not only that a 'quality' culture exists but has been delivered. The head of the institution has the responsibility of establishing throughout the institution a 'quality culture' which includes regular reviews of course structure and content, teaching methods, quality and quantity of teaching resources, quality of course delivery, staff development and appraisal procedures, extent of student and employer satisfaction, as well as external accreditation and assessment.

(Sizer, 1987, pp 173-175)

Academic autonomy does not rule out the collective accountability of academics to ensure that quality education has been provided and disciplinary standards are met. All in all, for quality assurance to be meaningful and effective, a higher education institution

must ensure the integration of three basic elements: an appropriate learning environment; an effective quality assurance system; and most important of all, appropriate attitudes and beliefs. To that, one might add a clear understanding of the meaning of quality in the context in which it is being used.

Some Conclusions from the Review

Most obviously, the quality assurance literature is organised (very pragmatically) around mechanisms and protocols rather than theories. This literature shows that systematic quality assurance utilising many of the tools and mechanisms discussed, is practised by a number of higher education institutions in the west. Many of these concepts, as was discussed earlier, have been imported to Hong Kong from the UK in particular.

Systematic quality assurance such as validation and accreditation which encompass self-evaluation and peer review are also frequently used by higher education institutions as a means of demonstrating to the public and the government who funded higher education that the quality of the educational experience is of a comparable and acceptable standard.

However, the review of the literature also shows that many theorists and practitioners of higher education are critical of the effectiveness of many of the popularly used quality assurance tools and mechanisms. Harvey (1993) pointed out that most quality assurance systems are complex, utilising various assessment tools but these assessment tools all have problems. Ideally, an effective quality assurance system should aim at measurement as well as continuous development but often the quality assurance system consists of checks and measurements by internal or external quality assurance agents rather than means to enhance the educational experience. In most cases quality assurance systems

are mainly used to ensure threshold quality. Furthermore, most quality assurance systems are not demonstrably cost effective and there is lack of evidence that these cumbersome procedures have any direct impact on the quality of the learning outcomes. In other words, the workload is heavy but the result is limited.

Secondly, the review of literature on management of higher education institutions shows that theorists who attempted to apply popular management theories such as TQM to the university often believed that development of a culture of quality is important and that this cannot be mobilised by management fiat or policies and procedures which emphasise hierarchical control from above. Instead, ownership of quality should be developed among all staff and students and it could be encouraged by appropriate devolution of power to the lowest levels.

This view is echoed by some theorists on academic quality assurance who emphasise that one of the keys to programme improvement is peer review, and not 'control' by administrators, inspectors or the like. Quality assurance does not lead to significant improvement if it is judgmental.

The other fundamental factor is self-evaluation. Self-evaluation is important as it is the basis for change, renewal and improvement. If it is taken seriously and done thoroughly, it can be a demonstration of everyone's commitment to quality. Theorists also support the idea of devolution of responsibility throughout the university to develop a sense of ownership of quality assurance among these staff. As pointed out by Harvey (1993), what is required is a continuous process of quality improvement. This will only come about if there is a clear identification of responsibility for quality, and that ownership and

control of quality is in the hands of those people who can most readily affect teaching and learning, i.e. students and staff.

In brief, while there are strong justifications for having an explicit quality assurance system in order for a higher education institution to be accountable, the development of an implicit sense of quality is equally important. A missing link here, is that it is not clear if quality assurance mechanisms are conducive to the development of a sense of quality of the student experience. It should be noted that quality assurance systems are essentially founded on steps and procedures which have to be followed through by staff responsible for an academic programme. Whether these compulsory quality assurance mechanisms are accepted by all as genuinely useful in assuring and improving quality of the student experience or whether they are looked upon as a management control mechanism is not clear.

This account of the quality assurance literature has shown that a great deal of the discussion of quality is dealt with in terms of systems used by organisations to check quality. For some of the work in this area there seems to be an unspoken assumption that the systems and mechanisms are there to reassure or check something that is seldom discussed – quality of what? In a sense the most important dimension is taken for granted – that quality is universally understood and that the systems can ‘assure’ it. That said, there are frequent references to the need for clear objectives and emphasis on the quality of the process which attempts to attain the objectives.

In previous chapters, it was argued that teaching and learning, as one of higher education’s most important purposes was a legitimate area in which to explore the

concept of quality. The quality assurance literature has shown that there are systems and techniques in practice which try to ensure that quality is maintained. It is reasonable to assume that the quality concept refers (sometimes intangibly) to teaching and learning. But there seems to be no consensus about the philosophical purposes of all of these systems, mechanisms and activity.

Returning to the arguments made earlier, this may be because, in part, some quality assurance models attempt to explore universities, departments and programmes across a range of purposes (e.g. research, teaching, community service). As was discussed earlier, this would seem to be a very difficult outcome to achieve. The argument in this study emphasises the need to identify clearly, the different purposes of a university and address those, almost paradigmatically, as one would address the investigation of any complex concept such as quality.

Recalling that two key concepts in the quality assurance debate were objectives and process, in this case 'learning' will be the objective and thus it is the quality of the 'process' (what will be called the student experience) leading to that objective which should be examined.

One author not necessarily associated with the quality assurance literature, Ference Marton has made an interesting contribution to the discussion about the definition of quality:-

While undoubtedly there can be many and disparate views of quality, if you want to improve it you have to take a stance and define your own view which you are then obliged to argue for ...So, trying to improve quality in higher education meant to me, deciding what the quality of what we wanted to improve was, to make explicit what we think better

quality of that is, having an idea of how it can be achieved and bringing together the different aspects of the issue in a theory like statement.

(Marton, 1998, p. 179)

Certainly this approach works in all cases. It seems to boil down to the simple thought that since there is no universally agreed definition about quality, when discussing it the definition being used and considered by the author should be set out. In doing so however, one must accept that there is no single absolute concept of quality.

If the focus of interest is that purpose of a university which is the promotion of learning, then it is also of primary interest to examine the higher education process and how the quality can be improved in terms of learning. It would seem to be axiomatic, when considering the notion of quality of teaching and learning, that learning is a necessary if not sufficient condition for the quality of this purpose. In other words, the promotion of the learning dimension of a university's purpose **cannot** be said to be of high quality if learning has not resulted. One can go further and argue that the **achievement of learning** is the most important determinant of quality of that part of a university's function.

Marton's (1998) pragmatic method of dealing with the notion of quality by circumventing any need for any single absolute definition of quality is helpful. In the absence of an accepted definition this is a reasonable way forward. For this study, quality of the teaching and learning dimension of a university's activity will be about the extent to which learning outcomes are achieved.

Perry (1987) supports this view:

...the most important measure of teaching quality must surely be the standard which students themselves have attained at the end of their course of study. This standard is the most direct and

important indicator of the quality of teaching since it represents the outcome or 'product' ...

(Perry, 1987, p. 38)

In this study, as will be seen later, it will be argued that the learning outcomes discussed by Perry (1987) are brought about not just by teaching but the broader 'student experience of higher education'.

Returning to a paradigmatic framework, the next step should be to examine the operationalisation of learning in terms of process and outcome. In order to understand this better another body of literature can be examined.

Chapter 3: The Student Approaches to Learning Literature

Introduction

In the last chapter it was tentatively concluded that the quality of that part of a university's mission related to teaching and learning must be, to some extent, related to whether students have achieved desirable learning outcomes. In this chapter further consideration will be given to an important body of literature which is related to how students learn.

As has been seen, the quality assurance literature is large and somewhat diverse. There is another body of literature which may be able to shed light on the general problem of how to improve the quality of the student experience in order to achieve learning. This literature is much smaller than the quality assurance literature discussed in the previous chapter but is nonetheless very important in this overall debate. It can loosely be termed the 'student approaches to learning' literature. The works in this category take as their basic premise that various strategies and approaches to study can affect learning. There have been recent calls in Hong Kong for quality teaching. But 'teaching' as a concept is complex. The term 'teaching' is, of course, only a shorthand expression to describe a whole process that takes place in the higher education institution. Teaching is often conceived of as an 'end' in higher education whereas it really is only a means to an end. It is one means to promote **learning** in students. But students' learning is of course, not brought about by teaching alone. On the contrary, as Shuell points out:

If students are to learn desired outcomes in a reasonably effective manner, then the teacher's fundamental task is to get students to engage in learning activities that are likely to result in their

achieving those outcomes... It is helpful to remember that what the student does is actually more important in determining what is learned than what the teacher does.

(Shuell, 1986, p 429)

The student approaches to learning literature, in some of its manifestations, makes no explicit connection or reference to quality in the way in which the quality assurance literature obviously does. That said, this body of literature focuses principally on **learning** and since in the central argument of this study, the assessment of the quality of the teaching and learning purpose of a university must concentrate on learning as a primary outcome, then it is a fairly straightforward task to build the necessary linkages. This literature is relevant to this study because it deals with learning and the strategies that students adopt which affect learning. It is the contention of the argument in this study that the quality of the teaching and learning dimension of a university's mission lies mainly in the achievement of learning outcomes. In other manifestations, however, as can be seen below, the notion of quality is built into the discussions of approaches to learning. Some of this literature is of especial importance since the empirical work was carried out in Hong Kong and other 'Confucian-heritage cultures'. (Biggs 1996, p. 46)

Background to the Student Approaches to Learning Literature

Many of the roots of the study of student approaches to learning, lie in the discipline of educational psychology. Several theories of learning have emerged over the years. One of them, the student approach to learning, according to Watkins (1996) had, as one of its prime motivators, an earlier paper by Marton and Saljo (1976). Watkins helpfully cites Walberg and Haertel (1992) who have credited the Marton and Saljo paper as being:

...one of the most widely cited sources in the entire literature of educational psychology (Walberg and Haertel, 1992)...

(Watkins, 1996, P. 6)

According to Watkins (1996), the student approaches to learning argument, essentially grew out of a dissatisfaction with other theories of student learning and, in particular, the information processing approach. This approach is criticised since it focuses only on the internal study processes of students and ignores the other contexts such as motive and environment. Instead, the student approaches to learning argument puts the perspective of the student as the key determinant of the theory. In this way the context of the learning approach is taken into account - unlike the information processing approach, which focuses:

...too narrowly on the study processes of students as if that studying took place in a vacuum. In fact, the learning environment has profound effects on studying.

(Entwistle and Waterston, 1988, p.246)

The importance of the studying context and learning environment will be an important consideration in the development of the overall argument in this study.

The student approaches to learning theories examine the different learning approaches or strategies adopted by students. The researchers in this field identified different strategies – a ‘surface’ approach and a ‘deep’ approach. It was further found that students adopting

a 'deep' approach achieved better learning outcomes. Ramsden (1992) characterises the deep and surface approaches thus:

Deep approach

- *Intention to understand. Student maintains structure of task.*
- *Focus on 'what is signified' (e.g. the author's argument, or the concepts applicable to solving the problem).*
- *Relate previous knowledge to new knowledge.*
- *Relate knowledge from different courses.*
- *Relate theoretical ideas to every experience.*
- *Relate and distinguish evidence and argument.*
- *Organise and structure content into a coherent whole.*
- *Internal emphasis: 'A window through which aspects of reality become visible, and more intelligible'*

Surface approach

- *Intention only to complete task requirements.*
- *Student distorts structure of task.*
- *Focus on 'the signs' (e.g. the words and sentences of the text, or unthinkingly on the formula needed to solve the problem).*
- *Focus on unrelated parts of the task.*
- *Memorise information for assessments.*
- *Associate facts and concepts unreflectively.*
- *Fail to distinguish principles from examples.*
- *Treat the task as an external imposition.*
- *External emphasis: demands of assessments, knowledge cut off from everyday reality.*

(Ramsden, 1992, p. 57-58)

The original ideas espoused in the student approach to learning theory underpins Ramsden's strategies for professional development of teachers and the evaluations carried out by students. In this latter regard, Ramsden's 'Course Experience Questionnaire' has become widely used for quality assurance and the evaluation of the student experience, as will be discussed later. Ramsden argues that in order to teach effectively one must be aware of both the desirable things that we want students to learn

and the strategies that best bring about that type of learning (Ramsden, 1992, pp. 57-58). Much of the strength of Ramsden's work, is his refreshing ability to translate or transform a great deal of theoretical or at least, principally scholarly work, into direct practical application. Many of his influential publications which relate to the professional development of tertiary teachers are grounded solidly in this student approaches to learning research and scholarship.

Some Findings from the Student Approaches to Learning Literature

Although several influential scholars contribute to this body of knowledge which built upon the original work undertaken in Sweden, much of the later work was geographically widespread. In the UK, Entwistle (sometimes together with Ramsden) developed a learning process involving an Approaches to Studying Inventory (ASI) (Entwistle and Ramsden, 1983). On the other side of the world, in Australia, Biggs (1987) developed an instrument grounded in the original student approaches to learning work called the Learning Process Questionnaire which was used in schools to determine learning processes of school pupils. He also developed a similar questionnaire for university level called the Student Process Questionnaire (SPQ). The SPQ and the related work becomes even more interesting and important since it has been widely used in Hong Kong. However, the SPQ or LPQ have been administered in many other cultures in addition to Australia and Hong Kong including Burma, Indonesia, Malaysia, Philippines, Nigeria and Nepal (Watkins, 1996, p. 20-21).

Biggs's work using the LPQ and SPQ draws on a model as a:

...framework for putting together the important components in the classroom so that we may think about the way they operate in relation to each other.

(Biggs, 1992, p.4)

called the '3P' model – Presage, Process and Product. Each of these refer to different aspects of classroom learning i.e. Presage refers to a state prior to learning occurring; Process is when learning is actually happening and the third stage, Product is the outcome of the learning. This model, first suggested by Dunkin and Biddle (1974), Biggs uses to explain his ideas of motive / strategy, construction of the learning model. The SPQ contains six sub-scales, viz. Surface Motivation; Surface Strategy; Deep Motivation; Deep Strategy; Achieving Motivation; Achieving Strategy. Biggs (and others) have shown that pupils and students who adopt either Achieving or Deep Approaches to Learning are more likely to score better in tests and other assessments from those of their peers who adopt only a Surface Approach (Biggs, 1992).

One extremely interesting aspect of the student approaches to learning work (especially Biggs' work) is its recognition that learning is predicated upon a multiplicity of different variables and not just one or two. Learning takes place in a context and the context exerts influences by means of a multiplicity of variables. Entwistle and Waterston put this succinctly:

In fact the learning environment has profound effects on studying.

(Entwistle and Waterston, 1988, p. 246)

This notion of multiple influences and especially the influence of environmental factors will be extremely important when the fieldwork stage of the project is discussed. The role of the learning environment is also very important in the North American literature as will be seen later.

Whilst the approaches to study literature has an enormous importance in its own right, it takes on even more significance in this study since, during the last few years the major data collection instruments, Biggs's LPQ and SPQ have been applied in Hong Kong. Several studies have been undertaken. The outcomes of many of them are summarised in Biggs (1992). One of the major findings of the LPQ and SPQ applications in Hong Kong (at both secondary and tertiary level) was that the profile of Hong Kong students was in the main higher, in deep and achieving approaches than Australian students. This leads to questioning of the previously received wisdom that the Asian Learner is a rote learner (Biggs, 1992, p. 63). It seems that the Hong Kong learner from these studies is less of a rote learner than his or her Australian counterpart. The SPQ and LPQ results seem to indicate that the Hong Kong learner is employing a number of higher level strategies involving understanding rather than memorising. (Biggs, 1992, p.65).

In a recent and important work in this field Prosser and Trigwell (1999) discuss the practical implications of the student approaches to learning scholarship. In particular, they conclude that the answer to the 'quality of teaching' does not lie in adding presentational skills to the repertoire of the abilities of the individual lecturer but in the promotion of the understanding of taking the student's perspective. They eloquently describe how two students, similar in background, have completely contradictory learning outcomes because of their higher education experiences. Prosser and Trigwell argue that

understanding the student's perspective and putting that priority at the heart of staff development for university lecturers is the key to enhancing the quality of the student experience. Another recent publication by Dart and Boulton-Lewis (eds) (1998) brings together the work of a number of scholars active in the student approaches to learning area. The range and diversity of both the geographical distribution of the scholars and the variety of applications of the student approaches to learning research testifies to the level of acceptance of this work. The book which is dedicated as a tribute to the work of John Biggs takes as its organising theme Biggs' 3 P model (Presage, Process and Product) Biggs (1993).

Although some of the student approaches to learning research in Hong Kong examined environmental factors and their influence on learning approaches, this tends to have been concentrated on the classroom environment specifically rather than the larger school or university environment. It is difficult therefore to compare those conclusions with the 'environmental impact' literature which has emerged in North America (see below). It is somewhat surprising that this important student approaches to learning scholarship which has travelled from Australia and UK to Hong Kong and to many parts of Asia and the Pacific Rim, does not seem to have made a greater impact in North America where the interest in the educational processes has been of long standing.

The student approaches to learning literature has clarified the psychological principles which underlie the studying and learning processes. Much of it focuses on classroom learning. In trying to get to the issue of quality in terms of the promotion of learning dimension of a university's purpose the focus must perforce, be some what wider. The student approaches to learning literature recognises that learning is not unidimensional,

nor does it occur in a vacuum. Watkins (1996) quotes Schon (1987) from his seminal work 'Educating the Reflective Practitioner' that education does not take place in a laboratory but in 'a soft slimy swamp'. (Schon, 1987, p3). There would therefore seem to be a need to get some sort of better understanding of what exactly is going on in 'the swamp'.

Conclusion

The quality assurance literature has proven to be diverse and, in some cases, insufficiently well-focussed or precise in what exactly it means by quality. This work argues that the quality of teaching and learning must be expressed, in part at least as a function of learning. The student approaches to learning literature has explained some of the underlying psychological processes which influence learning and particular type of understanding. From that literature on its own however it would be difficult to construct a universal framework for teaching and learning in higher education against which quality may be considered. It would seem to be more likely that the student approaches to learning theories would be a component part of an overarching model if one exists.

Nevertheless, this literature emphasises the notion of the studying context — the environment in which learning takes place. The importance of this notion will be pursued further in the next chapter where similar ideas are central to the College Impact Literature.

The student approaches to learning literature also introduces the tripartite model — presage, process and product. Again similarly structured models will prove to be important.

Although this literature seldom discusses notions of quality in higher education it concentrates on the achievement of learning. Thus, it provides important illumination of how quality as defined in this study, may be enhanced.

Chapter 4: The College Impact Literature

Introduction

In this chapter, there is a further review of the literature, this time concentrating on the North American ‘college effects’ or ‘college impact’ literature. This literature provides many interesting insights into the relationship between the student experience and learning outcomes. By drawing on this literature the conceptual framework for the remainder of the study is set out. Finally the research questions which the rest of the work will address, are set out.

Reasonably, some scholars began by looking for a conceptual model which explains higher education as a process. As noted above, Lindsay (1993) suggests that there is no theoretical model and so researchers should be pragmatic and consider a ‘stakeholder’ approach. That is to say more can be found out about the university experience by asking the principal players, the most important of whom are the students themselves. However, some scholars would take issue with Lindsay and, in the body of literature on college impact, there are some authors who present their explanations as theoretical models. There follows a brief review of these models.

This chapter further extends the discussion of the literature connected with the quality of the student experience of higher education. In particular, the chapter examines a body of North American literature which postulates various theoretical models to describe the higher education process as it affects students. Much empirical research has been

conducted in the USA where traditionally, a high proportion of GDP has been invested in higher education and high student participation rates are the norm.

The various theories to explain the higher education process are discussed and their applicability to the general research issues being addressed in this study. The student approaches to learning literature discussed in the previous chapter, focussed on the identification of individual or personal approaches to study which bring about the desirable types of learning. The literature from North America on 'college impact' tends to examine the role of the institution rather than the individual student in achieving learning outcomes.

The College Impact Literature

In essence, this body of literature emphasises the importance of student effort and involvement in their academic and extracurricular activities as being among the most decisive elements in promoting positive learning outcomes. Teaching and learning in university is viewed as a multi-faceted process. While universities themselves and staff members are responsible for providing the resources and facilities, for designing a curriculum that is the most up-to-date and relevant, students must involve themselves fully in university learning activities, and take advantage of the opportunities and resources provided to them.

Based on a review of a considerable number of empirical studies of the effects of higher education, Pascarella and Terenzini (1991), Astin (1984) and Pace (1984) all came to very similar conclusions that:

...the impact of college is not simply the result of what a college does for or to a student. Rather, the impact is a result of the extent to which an individual student exploits the people, programs, facilities, opportunities and experiences that the college makes possible.

(Pascarella and Terenzini, 1991, p611)

The college impact literature examines many different aspects of higher education including input, process, environment and the outcomes of higher education. In 1969, Feldman and Newcomb (Feldman and Newcomb, 1969) published an important book in which they reviewed over 40 years of theoretical and empirical studies on higher education and student learning. It is clear that studies done in the 60s have made a significant contribution to the development of a theoretical framework for investigations in this field. The availability of these theoretical models and frameworks for organising the research on the impact of college, caused a sharp increase in the number of focused systematic studies on college impact over the past 20 years. Advanced analytical tools, especially computers with statistical software, have also made it possible for researchers to conduct more sophisticated empirical studies on the effect that college has on students. Research grew rapidly both qualitatively and quantitatively during the 1970s and 1980s, providing a much more diverse range of research designs and empirical findings. The volume seems to have increased considerably since the 1960s.

Despite this substantial activity, research findings and knowledge about student development in higher education have remained somewhat confusing and perplexing. The major problem with the diversity of studies done in the field is that one often finds an investigator who claims to be studying the same problem but they frequently do not look at the same variables or employ the same methodology (Astin, 1984). Even when the

same variables are being studied, they are often labelled and described very differently by different researchers. This is the reason why it is especially important to clarify the purpose of any research and the theoretical framework upon which it is based. Without these, meaningful comparisons across different studies are very difficult to achieve.

Most of the prominent contributions to the theory of development and research in the field of university effect or college impact have been made by psychologists who took the lead in the early investigations into student development in higher education in the US. As a consequence, the review of past and current research has almost exclusively been dominated by psychological models. (Pascarella and Terenzini, 1991) The majority of these psychological models adopted developmental theories, primarily psychological stage theories which address issues of nature, structure, and processes of individual human growth. These studies therefore, focused on the examination of the developmental and psychological changes within students. The emphasis on the psychological model approach explains why early research on college impact concentrated its attention on the nature and outcomes of student development, rather than examining programmes, services, and the other institutional characteristics which relate to the processes of the student higher educational experience. (Erikson, 1963, 1968, Chickering, 1969)

While information about students' individual developmental processes are important, it would seem that policy makers, institutional administrators and educational practitioners seem to have benefited little from these conclusions in terms of applying them in the universities themselves. One of the intentions of this current research is to search for an approach which would effectively provide new insights and useful information to administrators, staff members and others who provide the resources and shape the

programmes for undergraduate teaching, learning and development in Hong Kong. This will be done by examining what constitutes the quality of teaching and learning. It is true that although university personnel are aware of, and are guided by the knowledge of the many different developmental and psychological learning theories available, decision making and actions taken in the institutions seldom draw on the research results or are backed up by clear and formally stated theories.

The Pedagogical Theories of Higher Education

It would be appropriate at this stage, to examine some of the models of teaching and learning that have been advanced. According to Astin (1984), pedagogical theories have a strong influence on how the university experience is generally organised. Astin categorised the existing major higher education theories into three basic types, namely the 'subject matter theory', the 'resource theory' and the 'individualized theory' (Astin, 1984). The 'subject matter theory', often referred to as the 'content theory', focuses on the subject matter in teaching. Exposing students to the right courses and material is the most important aspect of education. In other words, the syllabus and curriculum matter most of all. According to this theory, evaluation and reflection is concentrated on the course syllabus design, prescribed reading, and assignments. This traditional model of education assigned students to a relatively passive role in the process. Astin (1984) argues that this pedagogical practice benefits those students who are already highly motivated and are interested in the subject that they are studying.

The 'resource theory', on the other hand, is frequently used by governments, policy makers and institutional administrators. The proponents of the resource theory believe

that if the right resources are provided, student learning and development will occur naturally of its own accord. Therefore, the acquisition of resources is perceived to be one of the most important tasks of an institution.

The resource theory also forms the basis of one of the most common ways in which the quality of a university is assessed. As suggested earlier, quality is often measured using easily available indicators such as, teacher- student ratio, number of library items, availability of recreational facilities and research grants. It is believed that the more that is available to students, the better the educational outcome will be. This is a seductive, yet in the end, overly simplistic theory. However, the resource theory tends to lack an in-depth explanation of why and how these resources promote learning and development in students, and also when such developments actually occur while students are attending university. Therefore, the institution may have detailed statistics about teacher-student ratio, but have little information of how the members of staff interact with the student, and whether those interactions actually bring about desirable learning outcomes. This weakness often appears, as has been seen previously, in the quality assurance literature, particularly where performance indicators are being criticised. The argument is that the performance indicators become dominated by the available data (usually financial indicators), rather than data to measure the more important dimensions of the higher educational process including learning.

There is a third theory, the 'individualized theory', which is the most frequently used model by psychologists who are interested in the study of higher educational processes (Astin, 1984). At the centre of this theory is the individual learner, each perceived to have a unique set of needs which would benefit most from tailored instructional programmes

and services. According to this theory it is impossible for a single pedagogical approach or allocation of resources to serve all of the needs of all students adequately. Here, the theory sharply contrasts with the construct of the subject matter theory which pays little attention to student input in the learning process. The individualized theory of pedagogy emphasises flexibility, the use of different instructional techniques to promote student learning, and learner centred studies. Appealing as it might be, this has created a lot of difficulties in institutional practices because students' needs and learning styles are diverse, and the concern for flexibility often leads to vagueness in implementation and practice. It can also be extremely resource intensive. (Astin, 1984)

Based on some research findings at the pre-university level which suggested that learning will be optimised when the learning environment is structured to encourage active participation by students (Rosenshine, 1982), a similar theory to explain the impact of higher education by relating traditional pedagogical theories to student participation has been suggested. This theory (or to be more accurate family of theories) is sometimes referred to as the 'theory of student involvement'. The involvement theory can broadly include models associated with 'student involvement' (Astin, 1984), 'student integration' (Tinto, 1975), and 'college impact' (Pascarella and Terenzini, 1991). These ideas commonly stress the importance of the interaction between individual, behavioural and environmental factors, emphasising the importance of the external dimensions of the student experience as influences on student learning outcomes. Its essence is, that in order to achieve the most desirable effects of the higher education experience, there must be sufficient student effort and investment of energy in the learning process in its broadest sense. Simply exposing students to the right material, and providing them with abundant resources does not necessarily bring about optimal desirable learning outcomes.

The underlying notion of the student involvement theory, in certain aspects, resembles the psychological theory of motivation. The researchers who adopted this theory, however, did not approach this topic from a psychological point of view. They prefer to use the term 'involvement' or 'engagement' because this term involvement implies the investigation of the study of those student behaviours and experience which lead to learning outcomes rather than looking at the abstract concept of motivation and the intrapsychic processes (Davis and Murrell, 1993). The emphasis of this idea is on the behavioural mechanisms or processes which facilitate learning, and it addresses issues such as students' contributions to their own learning outcomes.

Tinto's theory of student integration is derived from his seminal study of factors associated with student withdrawal from college (Tinto, 1975). He draws on the relationship between student social and academic integration and their effect on student retention. From the initial point of entry, students' commitment to completing their degree programmes is strongly influenced by how well a student is 'integrated' into the institution he or she is attending. Tinto argued that:

...the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experiences in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in a way which leads to persistence and/or to varying forms of dropout.

(Tinto, 1975, p. 94)

Developing a healthy sense of belonging is indicated by factors like college friendships, using campus facilities, the interaction and relationships with lecturers, and engagement

in a variety of university activities. Well integrated students can subsequently have a stronger commitment and desire to complete their degree course. By looking at other forms of university processes rather than student retention patterns alone, other researchers have then built on Tinto's model of student integration to study the complex processes that take place in university to investigate the dynamics of student development, experience and learning outcomes. For example, some studies examine the effects of student-staff interaction on students' educational outcomes (Endo and Harpel, 1982); student development of academic skills (Terenzini, Theophilides, and Lorang, 1984); students' academic growth (Terenzini and Wright, 1987); the impact of undergraduate experiences on aspirations and plans for further studies (Hearn, 1987); social integration pattern in the freshmen year (Christie and Dinham, 1991) and the long term effects and outcomes of higher education (Knox, Lindsay, and Kolb, 1992).

Among the many studies which have been carried out following Tinto's model of student integration, is Pascarella's study of college impact on student outcomes (Pascarella, 1985). Tinto's (1975) model focused on the influences of the university on students while they were within institutional boundaries, on student characteristics and also its influence on student integration. Pascarella, suggested a slightly different model which accounts for two other major components of the university experience. He examined the impact of institutional and organisational characteristics together with general environmental factors on student change. Pascarella's research model examined the relationship between institutional characteristics and student involvement using data from a wide range of universities and colleges. He looked at the different organisational features of institutions which varied in size, structure, style of teaching, environment, etc., and the effects that these factors in turn have on student involvement and interaction.

These, in turn, directly and indirectly affect college outcomes. The organisational features tended to be at a macro level, e.g. large numbers of students, Ivy League, and single sex.

As well as these studies done on how institutional characteristics and environmental factors affect the student experience, a substantial body of research looked at the actual patterns of student engagement in university. Studies indicated that the greater the effort and time expended by students in the opportunities granted by their university, the greater the likelihood of academic success, personal growth, and persistence within the educational system. Astin (1977, 1993), Pace (1990) and Kuh (1995), studied student involvement in terms of the energy and time students commit to their student experience.

These studies

...seek to document the outcomes produced by interactions between students and their institution's environment, broadly defined.

(Kuh, 1995, p126)

These arguments conclude that student engagement is a crucial ingredient in the production of positive learning outcomes. They further address the importance of developing a supportive and enabling environment which fosters and encourages quality student involvement, thus resulting in the achievement of desirable learning outcomes.

In this body of literature the terms engagement or involvement cover many activities which make up the student experience — not simply those which are overtly involved with the academic process. As well as the usual academic activities such as attending

classes, writing assignments and studying in the library, the engagement concept covers social activities with other students and staff through the Students Union and clubs and societies, participation in sports events and attendance at cultural events. The research shows that high degrees of involvement with a very broad range of student experiences enhances learning outcomes.

Not all scholars find the conclusions from the college impact literature convincing.

Goodlad (1995) criticises many of these studies from a methodological point of view. He argues:

...there is no way in which these studies can separate out the effects of maturation on students' beliefs and attitudes; nor can the studies eliminate the effects generated by the choice by students of certain types of College and the selection by faculty of certain types of students.

(Goodlad, 1995, p. 15)

If indeed the college impact research was claiming causality then Goodlad would have a point. Causality could only be demonstrated absolutely if all other possible variables are taken into account. Perhaps these studies are at most, imprecise in stating exactly what they are saying but it seems evident that they have found an association between certain factors and outcomes. Whether the relationship is absolutely causal is beside the point if the studies are offered to provide advice to those engaged in higher education.

Goodlad seems to recognise this:

Like the best forms of academic study...they offer illumination by limiting the field of discourse.

(Goodlad, 1995, p. 15)

Some Conclusions from the Literature

Viewed holistically, these student involvement, integration or engagement literatures do have many common threads which allow them to be considered as one entity – the college impact literature. Is this where the quality of higher education lies? Certainly this student engagement literature presents some impressive volumes of field work and research carried out over a number of years. There is overtly, little crossover between this literature and the quality assurance literature nor the student approaches to learning literature either for that matter. That said, there are some similarities which exist, once the problem of differing terminologies has been overcome. The engagement literature emphasises the complete effect of student engagement in all the dimensions of university life – their integration into all of the aspects that college has to offer. In the quality assurance literature, Harvey (1993) introduces the idea of the ‘Total Student Experience’ arguing that that is how the time spent at university should be seen — as a complete holistic experience. These surely are notions similar to the idea of engagement using, simply, different words to label them.

There is yet another significant crossover. Harvey and Knight (1996) have recently introduced the idea of higher education as a ‘transformative’ process from ‘pre-transformation state’ through a ‘transformative’ student experience to a ‘post transformative state’. There are strong similarities between this concept and the ideas of the student engagement scholars. Here finally may be ‘The Swamp’ identified by Schon (1987). The transformative process takes place during the period of study at university via not simply teaching but via the total student experience. Harvey’s model is structurally similar to other ‘input-process-output’ type models of higher education. In

these models (see also Tinto, 1975; Astin, 1984; Pascarella, 1985) there are usually three distinct phases which are usually separated temporarily (i.e. 'in time'). They can perhaps be characterised thus:

**Figure 1:
Input Process Output Model**

Input	Process / Environment	Output
All that is before the higher education experience begins.	The higher education experience.	All that happens after the higher education process.

For Astin (1991) the variation on the above is called the I-E-O where the middle event is called 'environment' rather than process. (Astin, 1991, p. 14). Nevertheless, nomenclature aside the basic elements of the model seem to be similar. Resonances also abound with the 3P model at the heart of student approaches to learning literature, suggested by Biggs (1993). That there are three distinct phases central to the concept of higher education albeit using different terminologies, seems to be agreed, irrespective of the fact that the three distinct corps of literatures do not draw upon each other significantly.

Each of the scholars who have developed the various models has slightly different perceptions of the variables which characterise each of these 'temporal domains'. Examples of input variables would include 'aptitude'; 'achievement'; 'personality'. Process would include 'effort'; 'engagement'; 'interaction with staff' and output variables may include 'competence'; 'career success'; 'status'; 'values or beliefs'. The nomenclatures for the variables may differ but the similarity in the structure of the models is striking.

These models have been characterised (above) as having, as one of the features common to each variation on the theme, three temporal domains – the input domain or pre-transformation domain which takes place before the higher education (transformative / environmental / process) experience. This is followed by the process or transformative domain which takes place during the period of enrolment in higher education. (For a typical full-time undergraduate, that period can be defined as the three years of university attendance from initial registration to graduation.) That process period has been euphemistically described as ‘the black box’ implying that it is mysterious or unknown, perhaps even hidden. The output or post-transformation domain takes place after the process period. This is one example where the European and North American literatures overlap.

Conceptual Framework

This review of the various literatures concerning the student experience does greatly assist with the search for a solution to the problem in hand. The concern in this study began in respect of the concept of quality of higher education or of a university. It was then argued that the quality of a university had to be considered in terms of the quality of each of its purposes. It was considered to be most appropriate to pursue the concept of quality in terms of the teaching and learning dimension of a university’s purpose. It was then argued that the quality of this dimension depended, to some extent at least, on the result of the total student experience. So quality can be seen in part at least, as a function of the total student experience, especially its learning outcomes. From the review of the literature it would seem that there are several dimensions that influence student learning

outcomes. These include both individual, personal and motivational type factors as discussed earlier in the student approaches to learning literature; and the institutional, environmental and engagement type of factors which emerge from both the quality assurance literature and the college impact literature.

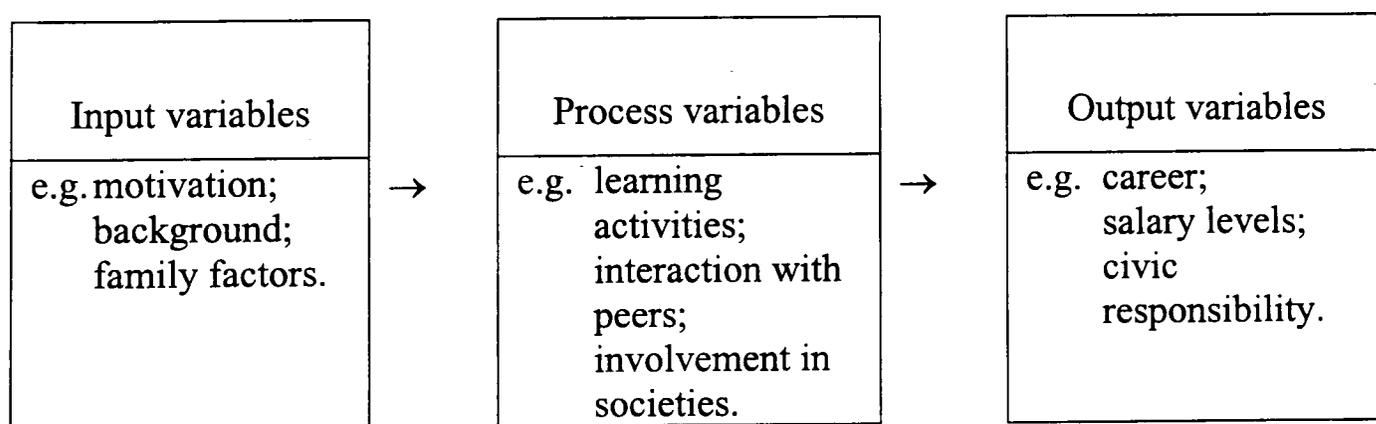
At the very beginning of this study, the research aims were stated only in the broadest terms emanating from a discussion of a problem about the concept of quality which was felt to exist. It would seem to be appropriate at this stage to refine that early discussion into research questions. In order to do that thoroughly, all of the key points made must be assembled into a conceptual framework within which research questions can be formulated with much more precision and thereafter, to consider testable hypotheses. At the outset of this study, in the definition and discussion of the problem, two major parameters were set. The first was the notion of 'quality' in higher education and the second was the recognition that universities, particularly university managers, have a duty to try to improve or even maximise quality. The argument was then extended to conclude that the various dimensions of university activities were so diverse that they must each have their own separate quality. No single indicator nor index of quality for a university could be derived.

The decision was made to concentrate on one of the most fundamental of a university's purposes – the promotion of learning. Consider again that a major concern of the study is the pressure or even duty of university management to maximise the quality of, in this case, the promotion of learning. From the review of the literature, the concept of the student experience emerged to describe all that happens during a student's time at university. This idea of using time to define some of the boundaries of the student

experience is emphasised further by those researchers who view higher education as a three part model comprising the pre-experience, experience and then post-experience phases or the impact/process/output model. It was seen that similar tripartite models exist with different definitions of each of the stages. It is further recognised that there are those (e.g. Sizer, 1982) who argue that, whilst universities know something about the input and output dimensions of the model little is known about the process dimension. There have been other calls from within the performance indicator literature for more research into the process dimension.

So, from the review of the literature it now seems possible to visualise the higher education process in a simple diagram (see figure 2 below). It would seem to be axiomatic that if the principle is accepted that input factors have an influence on the student experience and the output variables, then it must follow that the formation of these factors begin at birth (even prior to birth if it is accepted that personality, gender and other genetically influenced factors have an effect).

Figure 2
Input Process Output Variables



To follow the same line of reasoning, the university experience may influence an individual for the rest of their life and even beyond. For example the inspiration gained

by a young undergraduate at university may lead him or her to become a scholar, writer or scientist. Without his student experience as an undergraduate would Newton have composed the 'Principia' in exactly the same way? Or perhaps more ominously, had Adolf Hitler's experience as an architecture student been different, successful rather than a miserable failure would twentieth century history be the same? Possible examples abound. There can be positive consequence of a poor university experience. Had the young William J Gates stayed on at Harvard University would this research be being typed in a completely different way? The examples are, of course, partly whimsical but the serious point is that the student experience can have an infinite effect. It is not being suggested that the higher education experience is the only influence on the student's post university life. Clearly such an argument would be absurd. The higher education experience does however play a role in determining certain aspects of most students' lives thereafter.

Suddenly the idea of studying the whole higher education process seems to be impossible if, on one hand, outcomes can be affected by genetic factors and experiences from birth and, on the other hand, the higher education experience can have an infinite influence how can such a process be researched in any meaningful way? On the face of it, the task of drawing conclusions about how the quality of the student experience can be enhanced would seem to be impossibly daunting if we accept that it is influenced by an infinite number of variables on the input dimension and it can influence an infinite number of variables on the output dimension.

The solution must lie in the reduction of the scope of the study to reasonable levels. The study of the higher education process in the abstract, was not one of the aims of this

study. Instead, there was a desire to find out what quality meant in the higher education context and to determine how university managers can improve quality. Because of this, there are very strong practical reasons why the study should concentrate on the process, and, to a lesser extent, output dimensions.

A university manager only has substantial influence during the higher education process period. A Vice-Chancellor plays no part in the psychological development of one of his or her students prior to entering university. There may however be some influence on the salary obtained by the graduate at age 40. The influence in this case is indirect because a successful student experience (process) will surely influence indicators such as financial success (output). So although the Vice-Chancellor may influence outputs, that influence is exerted only during the period of the student experience. This realisation gives even stronger reasons to concentrate on the process dimension i.e. the period when a student is engaged in higher education, typically the three years of full time undergraduate education followed, for some, but not all, by a later period of post-graduate study either full-time or part-time.

But deciding to concentrate on the process dimension is a necessary but not sufficient condition for the conduct of a study. More specific research questions must be drawn up. The scope of the quality concept in the study has been reduced to the notion of quality of the teaching and learning dimensions of a university's mission. From the literature and also intuitively, it was concluded that one of the most important (if not the most important) determinations of that quality must lie in learning outcomes. Again from the literature it was found that there is evidence that various dimensions of the student experience influence learning outcomes. So, to find quality there must be an examination

of the student experience and the ways in which it affects learning outcomes. Given the stated aim of researching an area where the findings were able to be usefully applied by university leaders and policy makers it would seem logical to focus on the quality of the process aspects of higher education since that is where universities have most influence.

The following research questions can therefore be posited:

- What is the student experience of higher education in Hong Kong (i.e. what are its qualities ?)
- and
- How does the student experience affect learning outcomes ?

In addition to these broad research questions, various other subsidiary research questions can be drawn out. The Hong Kong dimension is inserted partly because of the interests and location of the researcher but it would be hoped that the results of any empirical research could be generalised beyond Hong Kong to the rest of the world.

As was noted in the beginning of this work, research into higher education in Hong Kong has been somewhat limited. Given the recent massive expansion of provision in recent years and the consequent injection of massive amounts of resources, any study into the quality of teaching and learning in the SAR would be extremely timely. Certainly, an empirical study on the scale being suggested in this work would be unique to Hong Kong.

The precise formulation of these research questions, outlined above, follows the line of the general argument that the quality of a university's promotion of learning function (i.e. the teaching part of a university's mission) must be firmly grounded and expressed in terms of learning outcomes. For the purposes of this study, that is where the quality of

the teaching and learning dimension of a university's mission lies. In the following chapter, the translation of these research questions into their operationalised constituents is discussed together with the research design and methodological approach.

Chapter 5: Research Design and Methodological Approach

Introduction

In determining a research approach, the first consideration had to be the scope of the project. The aims of the study had been refined to a point where research questions had been posed (see previous chapter). But the research questions could not be considered to be sufficiently well operationalised to allow immediate investigation. However they do set some limits. For example the main focus of interest was to be Hong Kong. The literature review above showed that there have been many, many studies elsewhere about college impact, the total student experience and effects on learning outcomes.

Such an investigation would be unique in Hong Kong. Is there any reason to suppose that the results of college impact say, would not hold for Hong Kong? The student population of Hong Kong universities is unusually 'mono ethnic'. Over 99% of the population is ethnically Chinese from the Hong Kong Special Administrative Region (SAR). They therefore share a common culture, history, heritage, school system and language. They also, unusually, learn in a second language, English, rather than the language of the street and their home which is the Cantonese dialect of the Chinese language. These features alone suggest that there may be some merit in conducting a local study and as a subsidiary research question, to see if findings from other parts of the world hold for Hong Kong. In addition, there is evidence that people of Chinese ethnicity are exceptional. Bond (1991) typifies a number of authors who argue that the Chinese are

...distinctive, special and different.

(Bond, 1991, p. 115)

Another work, that of Reid and Mak (1992), shows how the distinctive approach of the Chinese culture has been observed, even in higher education. They argue that certain higher education processes in Hong Kong are affected by 'Confucian values'. They also examine the effect of certain traditional role sets, especially that of 'teacher/pupil' in which the student never questions the master, and how they play a significant part in higher education life. The concept of peer criticism, which is a central tenet of many quality assurance systems, is rendered supine, they argue, because of these fundamental values which prevail. Other aspects of quality may also be affected.

This distinctiveness may, of course, limit the strength of any claim that the conclusions from this study may be generalised to the rest of the world. Nonetheless, there are strong reasons for conducting the empirical research in Hong Kong in order to learn more about the student experience of higher education in the SAR. There follows in this chapter a description of the methodological approach, research design and fieldwork. A reflexive account of the fieldwork and the various trade off decisions made during this stage of the project is included in order to better inform the reader about the limitations of the study and thus the conclusions.

Methodological Approach

In order to investigate the research questions set out, some consideration has to be given to the overall methodological approach to be adopted. The main research questions identified above, deal with concepts usually investigated from the standpoint of a social or educational researcher. Within the fields of education and social sciences there are

effectively three research traditions – the experimental tradition; the ethnographic tradition and the survey tradition (see, for example, Smith 1975) Although these three different approaches sit within the same discipline (i.e. social science), they each have their strengths and weaknesses. Scholars of methodology sometimes use these and other classifications to deal with the understanding of each of these different approaches. In the ‘real’ world of social research, seldom are research designs based exclusively on one of these design approaches alone. Instead, the investigator, for practical as well as theoretical reasons, draws on elements of different traditions as appropriate in order to tackle a particular problem. In any research project, practical problems emerge constantly which may require the researcher to examine possible solutions in any of these traditions. For practical purposes therefore, the distinctions among these three approaches are artificial since the pragmatic researcher will draw from more than one tradition as appropriate to address a particular problem.

In addition, there are sound theoretical reasons why a variety of approaches can and should be brought to bear on a particular problem. The concept of triangulation or methodological triangulation is not new. For many years social researchers have found that no single method or tradition was flawless. Accordingly, different research methods or sources of data can be used to examine the same problem. Thus if the same conclusion is reached using different methods or different data then the researcher can be more confident about the validity of the conclusion. These principles can be applied further in combining research styles in order to achieve the optimum balance of validity and reliability. The combination of styles, particularly the ethnographic and survey styles allows the researcher to draw the best from each. The value of combining these two traditions is set out in Sieber (1973). It is believed that this combination of styles can add

considerable value to a study such as this, and was, therefore, taken into account for the field work phases of the project.

The first research question, ‘What is the student experience in Hong Kong like (i.e. what are its qualities) ? ’ is, in part, a descriptive type question. The survey approach is usually adopted for large-scale descriptive work, especially in this case where it is also believed that the stakeholder approach can be used to advantage. The second question ‘How does the student experience affect learning outcomes ? ’ is perhaps more complex and, at one extreme could be interpreted as asking about the ‘causal’ type relationships between experiences and outcomes. Usually, when causal answers are required, the experimental tradition is used but this would call for all sources of extraneous variation being controlled. Also, the experimental method sometimes leads to the results being unable to be translated from the laboratory setting back into the real world. Since the practical applications of any results is a very important consideration for this study, such a difficulty would be of considerable importance. Even the quasi-experimental design (Campbell and Stanley, 1963) does not lend itself to this type of problem. One could imagine (in theory) creating a design where students were assigned to different treatment groups each of which (somehow) were exposed to a university experience with a single variation. However this would be extremely difficult to arrange in practice and even if it was possible there would be strong ethical arguments against such a design.

The survey approach does allow certain ‘causal’ type of questions to be dealt with, particularly in those situations where less stringent arguments are acceptable. The strengths of the survey approach lie in population validity and reliability, but it is weak

on internal validity and naturalism. It would seem to be worthwhile to try to combine these research styles to try to utilise the strength of each, in combination.

In many studies (see for example Plowden Report, 1967) ethnographic and survey methods were successfully combined by using unstructured and loosely structured interviews at the pilot or even earlier stages in order to create or test a survey instrument. The resulting instrument was then used in a large-scale survey context. According to Babbie (1992, p. 152) the creation of a questionnaire *ab initio* can be a seriously daunting task. It seemed more appropriate to locate a well tested and generalised survey instrument and then adapt it for the local Hong Kong culture. This technique is far from new and in the local South East Asian context it has been used highly effectively by scholars such as Watkins (1996).

The Choice of Survey Instrument

The literature review (above) made reference to some of the major survey instruments in this general field. There is no need to mention them again here for their own sake. The choice of questionnaire naturally depended on a number of criteria. These can broadly be summarised as follows:

- the instrument would require appropriate breadth in terms of content validity to allow the research questions to be fully operationalised;
- the questionnaire should be, preferably, well-grounded and be reliable having benefited from many applications;
- it should be possible to transfer / translate the questionnaire into a different cultural context (i.e. Hong Kong);

Although there exist numerous questionnaires which relate to different aspects of tertiary education i.e. Biggs' SPQ (Study Process Questionnaire) (Biggs, 1992); Ramsden's CEQ

(Course Experience Questionnaire) (Ramsden 1992); Marsh's SEEQ (Students' Evaluations of Educational Quality) (Marsh, 1984) to name but three, there seemed to be very few which were sufficiently comprehensive in dealing with the student experience in higher education in a way that would allow these particular research questions to be addressed.

The research questions being investigated have been tentatively refined. The primary interest lies in the quality of the student experience in Hong Kong and the effect that the student experience has on learning outcomes. From the literature review, one instrument, C. Robert Pace's CSEQ or College Students Experience Questionnaire (Pace, 1987), seemed to contain items and scales which, in broad terms, covered the most obvious concepts and constructs which were likely to be needed in the investigation. Furthermore data collected by the CSEQ has been used extensively to test a sub-model of Pascarella's General Causal Model by Kuh, Vesper, Connolly and Pace (1997). In this research, the authors examined student engagement variables and college environment, in relation to learning outcomes.

Before describing the CSEQ in more detail, it is important to describe various other relevant contextual factors which influenced various choices. The Hong Kong Government's University Grants Committee (UGC) has sponsored from its Central Allocation Vote a project entitled the 'Evaluating the Student Experience Project'. This project was an 'umbrella' project which funded various sub-projects. One of these sub-projects had as its aims and objectives, within the frame of the overall project mission, to develop and test a broadly based questionnaire to gather data and benchmark the student experience in Hong Kong for evaluation purposes.

The main objective of this Government sponsored project was the development and testing of an instrument and related protocols rather than the conduct of empirical research per se. The stipulations of the funding were that the instrument should be comprehensive, be applicable and usable in all of the Hong Kong higher education institutions and the target population was to be the modal category of students in Hong Kong — full time undergraduates taking first degree programmes. This final stipulation arose because of the then concern for the quality of the student experience which it was felt, may have been changed or even threatened because of the very rapid expansion of first year first degree places (FYFD) which had resulted from the policy decision to increase the number of degree graduates from the early 1990s onwards.

In spite of these restrictions, it was felt, pragmatically, that the aims of the instrument development project and the research which is described in this work could proceed in tandem. Indeed it was agreed in the funding proposal that a large scale administration of the final instrument would be carried out to serve as a form of test phase or pilot of the instrument itself. The main threat to the aims of the research project came from the limitations that that would place upon the generalisability of the findings of the research. If the sample is chosen from a particular population then the findings can only be generalised strictly to that population. So, in the strictest methodological sense, findings from full time undergraduates cannot be generalised to include postgraduates nor to students studying part time or by distance learning. The university experience of both of these types of students may well be different.

The 'College Student Experience Questionnaire' (CSEQ), is a comprehensive questionnaire that measures student progress and the quality of students' experience, of higher education. It is particularly strong in measuring student engagement activities in universities. The questionnaire has been widely used in the USA by a range of higher education institutions. In the covering statement, the authors emphasise that it is the responsibility of students, staff, and administrators to maximise those factors which contribute to the attainment of desirable educational outcomes. The first version was developed in 1979 by Professor Robert. C. Pace, a highly respected scholar in the field of higher education and Professor of Higher Education at the University of California at Los Angeles. Current versions of the instrument are now used by over 300 colleges and universities in North America.

Pace has been developing instruments for the evaluation of the student experience since the 1950s in Syracuse University. The pedigree of the CSEQ and its principal author is undoubtedly impressive. By the time the third (1990) edition had appeared over 350,000 undergraduates had completed the questionnaire (Kuh et al, 1997, p. 2).

Pace (1984) describes the questionnaire, thus:

By responding to the questionnaire students get an idea of what they are putting into and getting out of their college experience. Furthermore, asking students to reflect on what they have gained from their college experience is consistent with a value-added approach to outcomes assessment. That is, attending college is expected to make a positive difference in a student's knowledge, values, attitudes and competencies. Because students know what they were like when they began college, progress or gains they say they make in various areas is a value-added judgement.

(Pace, 1984, p. 103)

Although the instrument was first designed more than fifteen years ago it has been modified and extended in each of its major revisions.

Kuh et al (1997, p. 2) cite a number of studies which have been undertaken by others to validate certain aspects of the CSEQ, such as psychometric properties, face validity, coherence of scales and content validity of items and scales. Its credentials as a valid and reliable instrument are impeccable. Further, as the CSEQ was designed to be a multi-faceted comprehensive instrument dealing principally with the levels of engagement in the student experience and learning outcomes there would be a strong possibility that a sub set of the variables would be able to be used to pursue the research questions in this study.

Briefly, the original CSEQ (Third Edition, see Appendix 6) was an 191 item instrument comprising various sections — background items such as age and gender; activities in which students engage (e.g. time in library and talking to lecturers); impressions of the university environment (e.g. does it emphasise culture or vocationalism ?) and the amount of progress that the student has made (estimates of gains). At an immediate superficial level, the CSEQ seemed to offer a range of scales and items suitable for investigating the research questions in the study.

The key sets of variables necessary to operationalise the central concepts in the research question i.e. the student experience and learning outcomes are included. At the time that the questionnaire adaptation process took place (1996), there were no known, published works which had used the CSEQ to test propositions such as the ones postulated here. In

1997, however, Kuh et al (1997) published a study of a Sub-model of Pascarella's General Causal Model using CSEQ data to operationalise the concepts in the model (Student background, Environment, Student Experience, Gains).

This study is useful in that it helps to establish the validity of the CSEQ for this type of analysis. Kuh et al (1997) used multiple regression to determine some of the relationships as was intended in this study.

Permission to adapt and use the questionnaire was sought from the current copyright holders, the Centre for Post-secondary Planning and Research, University of Indiana (Bloomington). Professor C. Robert Pace had transferred the copyright to the University of Indiana some years ago. This permission was readily granted and the main process of adapting the questionnaire began.

In the first instance it was felt that the questionnaire in its form which finally would be used, would have to satisfy a number of criteria in relation to validity. Jaeger (1984) offers a framework for considering validity of an instrument. First of all, are the questions valid in terms of the content (content validity)? Have measures been taken to assure that the respondents:

- understood the question ?
- interpreted the questions as intended ?
- were willing to respond ?
- had the knowledge or information needed to respond ?
- were honest in their responses ?

- recorded responses accurately ?

These principles informed the adaptation process.

The Adaptation Process

The questionnaire was first modified and adapted to suit the specific local context of higher education in Hong Kong. The population under consideration is the modal category of students in Hong Kong, the full time undergraduate. Since they were going to be the principal respondents in the survey it was to them that attention turned for the questionnaire adaptation process. First scrutiny of the CSEQ in its unmodified form shows that there are some obvious examples of the questionnaire being ‘culture bound’ to North America. For example in the questionnaire there are references to ‘fraternity’ and ‘sorority’ houses which one knows intuitively, have absolutely no relevance in Hong Kong universities. So the first stage in the adaptation process was to remove the most obvious items which would be irrelevant in Hong Kong. This was done after some informal consultation and only the most obvious changes were made e.g. ‘College’ was changed to ‘University’ since that is the most common term for higher education institutions in Hong Kong.

In order for the instrument to provide accurate and reliable data about students’ learning engagement in local higher education institutions, appropriate modifications and alterations were required. The adaptation process attempted to make the instrument genuinely meaningful and relevant to students studying in Hong Kong campuses. With the unique local context and culture it was expected that student involvement in Hong Kong universities might be found to have quite different meanings from that found in the

North American model for which the design of the original version of the CSEQ was tailored .

In keeping with the philosophy that the university experience is a coherent whole which requires both student effort and a suitable campus environment the basic design of the CSEQ includes a set of scales that describe important categories of the student experience. The categories are used to define important dimensions of student involvement in meaningful learning activities on campus. Within each of these scales, there are ten to twelve items which indicate many of the activities that were believed to be meaningful in university life. Therefore, this part of the instrument allows a comprehensive assessment of the degree to which students become engaged in these different dimensions of the university experience.

The twelve activity scales of the original version of the CSEQ before adaptation, included library experience; course learning experience; art, music, and theatre; science; students union; athletics and recreation; campus residence; experiences with staff; clubs and organisations; experiences with writing; student acquaintances; and personal experiences. Each scale consists of a list of ten activity statements. To each statement in these scales, students respond by checking 'never', 'occasionally', 'often', or 'very often' to indicate their level of activity during the academic year, for that particular item. Pace has chosen to use the time students spend being involved in different university learning activities, as the indicators of student effort and engagement. The underlying belief is that, students' effort can be accurately reflected in the amount of time they spend on an activity (Pace, 1987).

Although the activity scales are central to the instrument, these are not the only issues dealt with. The questionnaire collects data on grades (self reported); estimates of gains (on a number of dimensions); university environment; workload and assignments; quality of teaching and background variables. The original CSEQ has a number of weaknesses as well as strengths. It is a relatively 'closed' questionnaire. There are no opportunities for students to expand or explain their answers.

The initial modification to the CSEQ had taken out the obviously culturally specific items which would not be meaningful to Hong Kong students. This was done by the informal consultation with a number of colleagues all of whom had completed their undergraduate education within the last three years. - The minimally modified CSEQ was labelled the 'Alpha Test' version. The informal consultations had pointed up a number of potential areas of concern with the questionnaire but, rather than make many changes at this preliminary stage, it was decided to go ahead with the next stage of the adaptation process.

As was pointed out above, the CSEQ is a long 'closed' questionnaire with no opportunities for respondents to write any free text or elaborate upon their answers. In these circumstances it was felt to be of major importance that the instrument was properly understood and relevant to the population being studied. A modified 'focus group' design was adopted for the questionnaire adaptation process. The key elements of this design were that a focus group of 20 to 30 full-time undergraduate students would be recruited for a two hour period. Students were recruited by advertisement on the notice boards of the Students Affairs Offices of the various universities. A payment at the universally agreed 'student helper' rate was offered for the two hour session. The first focus group

was recruited at City University of Hong Kong and 26 students attended. The students were briefed about what was expected of them. For the first part of the session, they would complete the CSEQ Alpha Test version. Then they would complete a short questionnaire about their experiences in completing the instrument, (see Appendix Three). Finally, after that was complete, there would be interviews followed by a 'round table' discussion/interview about the instrument itself.

It was intended that after each focus group sessions, the instrument would be progressively revised, and the new version submitted to the next focus group. In this way, it was hoped that there would come a time when the questionnaire was fully acceptable to the students. The first focus group session probably produced the most important feedback about the instrument itself. By the time the final (fourth) focus group was held, there was little negative feedback whatsoever. So the progressive focus group design acted both as a qualitative interview type adaptation process and as a piloting of the instrument itself. It also provided a valuable method of validating the instrument itself. The discussions also produced real data which could be of use in the study.

All of the focus group sessions followed broadly the same pattern. The briefing was conducted in Cantonese with some English; the CSEQ was completed, as was the follow-up questionnaire. The follow up discussion was fairly loosely structured. There were two main aims – first to discuss the questionnaire in detail, and in particular, to ensure that all problems or potential misunderstandings were picked up. The second aim was to gather data about the student experience and learning outcomes.

Outcomes of the Focus Groups

The length of the questionnaire and completion time had been a major concern initially because students in Hong Kong seldom fill out extensive questionnaires of this kind. However, the interview results produced reassuring responses from the students. They did find the questionnaire lengthy, but considering the wide range of university activities that the questionnaire covered, respondents reported that they found the length of the questionnaire appropriate and acceptable. Language had been another major concern before the focus groups were held. A bilingual version of the CSEQ, in both English and Chinese, had been planned. But contrary to expectations, a large majority of students interviewed expressed the view that they preferred the questionnaire to be solely in English. They found the language used was quite straight forward and did not create comprehension barriers for them. Students almost all agreed that adding a Chinese translation or translating the questionnaire to a Chinese instrument would make it more difficult and time consuming to complete. There exists no true written form of the Cantonese dialect. Instead, the ideographic characters used have been borrowed from mainland China and elsewhere. It is a notoriously difficult language form to learn to read in. So the original idea of creating a bilingual version of the CSEQ was abandoned. The layout of the final version basically remains similar to the original version.

The average completion time was 40 minutes in a 'classroom' type situation. Although respondents reported that given the nature and content of the instrument that this was acceptable, both the written feedback on the CSEQ Feedback Form and in discussion they strongly indicated that very, very few students would complete the questionnaire voluntarily. As one respondent put it:

I am happy to spend time filling this in since I am being paid. But, if you mail this to me I won't take the time.

This sentiment found fairly general agreement. Respondents in the interviews, discussed various solutions to the potential problem if 'voluntary' self-completion was to be contemplated. No satisfactory solution was identified at any of the focus group discussions. However, by the time the final focus group met a possible solution had been identified and considered to be acceptable by the students (see below).

Other than the minor changes with the item wordings and the general usage of the English language, for example the use of the words like 'college' was substituted by using 'university', and 'faculty' was replaced by using the term 'lecturers' to suit common usage in Hong Kong (which is based more on British than American interpretations of the English language), the preliminary fieldwork identified several major areas of the student experience that required more substantial reconstruction.

After the first rounds of focus group interviews, three major areas of the CSEQ were identified for various revisions. In the 'Background Information' section, the choices of questions about grades and field of study were altered so that it would suit the common usage in Hong Kong. The question about racial or ethnic identification was left out because the undergraduate population in Hong Kong is quite homogeneously Hong Kong Chinese. Certain modifications were made to the arrangement of the 'College Activities' section which consists of twelve activity scales. Besides the minor changes with certain specific items within a given activity scale, two major scales were dropped from the original version of the CSEQ, namely the 'Art, music and theatre' section, and the 'Student Union' section. These two sections were left out of the adapted CSEQ for quite

different reasons. Unlike the US and UK where 'Art, music and theatre' are a major part of university life, the situation is quite different among Hong Kong undergraduates. Most students reported that besides listening to pop music, they have never or rarely attended any arts, theatre, or music event on or even off, campus.

Initially, students seemed to be concerned about the money they have to spend on attending these events whereas universities in other systems often provide a lot more free opportunities on campus for students to explore cultural activities. There might be a need to investigate further why there seemed to be a lack of arts activities on campus in Hong Kong and the effect that has on university life. However, it was felt that because students seldom have the opportunity to engage in these activities, art, music, and theatre would not constitute a significant part of university life for students in Hong Kong. It would therefore be inappropriate to use it as part of the measure of university processes and the student experience.

The other activity scale that was left out was 'Student Union'. Because of the different student cultures in Hong Kong universities, rather than referring to a physical building or set of facilities that students could visit and spend time becoming involved in different sorts of recreational activities, the student union in local terms meant a small group of student representatives who function solely as elected representatives. The union is a council, not a provider of services as in the case in the US or to a lesser extent in the UK. Local students therefore were unable to relate to the items in this section of the CSEQ. Most of the recreational facilities in Hong Kong universities are run by the Student Affairs Office or other university facilities and departments. They serve the student body in a rather different capacity than would the Student Union among western universities.

Therefore, after careful consideration it was decided to exclude this scale as a meaningful measure of the student experience in Hong Kong.

A new activity scale called 'Experience with Computers' was added to the instrument. When the CSEQ was first published in 1979, the availability of computers in universities was not nearly as common as it is nowadays. Even in updated versions of the CSEQ (latest revision, 1990) surprisingly, computers and information technology do not feature to any great extent. Computers and technology have become major features of universities in Hong Kong and around the world. The rapid growth of computer use in all areas of campus has changed teaching, learning, research and communications in higher education. In the interviews with students, it became very clear that they spend a great deal of their time using computers, often both at home and on campus, and also to perform quite a wide range tasks. For example, typing assignments, searching for library items, communicating with peers through email, reading university news and bulletins, surfing the internet and writing computer programmes are all undertaken using computers. Almost all higher education teachers in Hong Kong now require assignments to be typed. Many traditional learning activities have been replaced by the use of computers, thus forming a distinctly different university learning culture among universities in the 90s.

It was felt that there was a need to create a separate scale to measure the level and extent of student engagement in relation to the use of computers because, on the surface at least, it has become a significant part of teaching and learning in Hong Kong. During the interviews, a number of significant types of activity were identified where computers became involved in the student experience. Ten items were written in a scale to represent

the range of these activities. The internal consistency of this newly created scale was checked using Cronbach's Alpha Coefficient at a later stage when the full scale administration of the questionnaire took place and the result was satisfactory.

The 'Conversation' and 'Estimate of Gains' scales, the two major sections following the twelve activities scales were altered. The alterations had been primarily to add rather than take out items from the original version. The modifications were made to include culturally specific items relevant to the local context. For example, questions about students' use of the English and Chinese languages in conversation, and the perception of their language gains in university were included. These suggestions were all made by students during the preliminary interviews. All suggested additions were confirmed by later focus groups or they were not included.

The finalised adapted version of the CSEQ was completed in March 1996 for its first time full scale administration in the seven higher education institutions in Hong Kong. In order to make it more meaningful in the local context, and, to distinguish it from the original US version, the questionnaire was retitled as the University Students Experience Questionnaire (USEQ). The final adapted version of the eight page questionnaire contains 210 multiple choice items. Divided into seven sections, the questionnaire begins with general background information questions, followed by the University Activities section which consists of eleven university activity scales each containing approximately ten to thirteen separate items. Then, there is the Conversations section, Writing and Reading, a section on students' Estimates of Gains and it ends with a section on Students' Perception of the University Environment in general. No open-ended questions are posed. The questionnaire was prepared and printed in an optical mark readable booklet format in order to facilitate data capture.

The Survey

The population under investigation is the (then) current full time undergraduate students in Hong Kong's universities. Ideally the questionnaire should be administered to a representative sample of that population. Consideration had to be given to a number of issues surrounding the fieldwork design and the sampling strategy. Many of these practical issues are inter-related and it may be more important at this stage to deal with them in the sequence with which they arose rather than more coherently than that. As is not unusual in a substantial piece of social research, many trade off decisions were made during this fieldwork stage.

The first issue to be faced was that of gaining entry to the field. One of the strong messages from the focus group discussions was that not many students would be willing to spend time completing such a lengthy questionnaire voluntarily. Thus a self-completion mailshot design, even with multiple reminders and prepaid return envelopes ...etc would not succeed in achieving a high return rate. Various alternatives were discussed with the students during the focus group meetings. One scheme which was given some serious consideration was to offer 'lucky draw' prizes to a few students whose completed questionnaires were selected at random. At least one university in Hong Kong uses this technique (in the form of tuition fee discounts for prizes) to increase the response rate for its biannual survey of students. Apart from the obvious problem of creating a potentially 'favourable' bias in students' responses, any benefits which the incentive might bring could be negated by the student having to identify him or herself on the questionnaire itself. Again during the focus group discussions the students stressed

the need for anonymity. There is certainly a great deal of (albeit anecdotal) evidence that Hong Kong students and indeed Hong Kong citizens in general are reluctant to take part in any type of activity where they might become identified with views or responses that are seen to be critical of some form of authority, perhaps arising from Confucian role sets.

Consequently, it was considered to be more important that anonymity be preserved.

During the focus group discussions it had been suggested by one or more of the students that they would be much more likely to complete the questionnaire if they were asked to do it in class time perhaps even under the supervision of a member of staff. In order to achieve this, the full co-operation of all of the universities would have to be obtained.

Initial discussions were begun with the Pro Vice Chancellor (Academic) of the City University of Hong Kong in order to find out if it would be remotely possible to obtain such co-operation; what might be offered in exchange for co-operation and the likelihood of members of staff in the institutions being prepared to administer the questionnaire in class time. There was one other item discussed and that was the possibility of the institutions releasing students' admissions scores and examinations scores. It was believed that data on each of these variables might be useful for the investigation of the relationship between the student experience and learning outcomes. During the focus group discussions the students (not unexpectedly) indicated that they would not report their admissions entry scores or examination scores in any detailed way. It is known, anecdotally at least, that Hong Kong students are extremely sensitive about examination related issues.

The discussion confirmed that the institutions would be very unlikely to release examination or admission score data to researchers. In addition to the extreme sensitivity

of the students regarding such data, a Data Privacy Bill in draft form was being considered by the Legislative Council at or around the time that the fieldwork stage was being carried out. The then bill (and ensuing Ordinance) is arguably quite draconian when compared with, say, the UK's Data Protection Act. Thus, after consulting with university authorities, it was concluded that it would not be possible to obtain admissions or examinations data from institutions.

So, a number of important trade off decisions were made in order to increase the response rate. Even after removing these potential threats to the response rate, there were still concerns about the likely response rate to a mailshot only questionnaire. Consequently, before resorting to a standard mailshot design it was decided that some other potential models should be explored. It also became clear from the discussions with City University that the universities would be unlikely to co-operate by allowing the researcher to gain access to class time for the administration of the questionnaire. Students had indicated that if they were asked in class by a lecturer to complete the questionnaire in class, they would almost certainly do so firstly, because they wouldn't be using any of their own personal time and secondly because a member of staff would have asked them to do so. Whilst some individuals would be prepared to give up some class time to allow data to be collected in their classroom, this would be very much on a grace and favour basis. It had been suggested that the only way in which universities would give such support would be, say, if they were asked to do so by the UGC.

After some thought, it was decided to approach the Chairman of the UGC, Mr. Antony Leung, to seek his support and endorsement. Mr. Leung was contacted first by letter and then in person. Fortunately the Chairman's support and encouragement were immediate.

He indicated that he would write to all of the University Vice-Chancellors and Presidents asking for their co-operation. In the end, the letter was sent by the Chief Civil Servant of the UGC (see Appendix Four).

In exchange for his support, Mr. Leung requested that a 'dossier' of findings be prepared in respect of each university and presented to them as a quid pro quo. The letter from Mr. Leung effectively secured the co-operation of the universities at least in so far as the Vice-Chancellors and Presidents were concerned. When it came to the actual implementation of the survey itself, levels of co-operation were somewhat more mixed. A follow up letter was then sent to the universities (Appendix Four) and the detailed liaison began with the contact persons nominated by the Vice-Chancellor or President. There can be little doubt at all, that without the support of the UGC Chairman, it would have been extremely difficult to gain entry to the field.

The adapted version of the questionnaire was then administered to a large sample of students. As well as gathering a great deal of useful data about university student experience in Hong Kong, the process also allowed the reliability of the adapted questionnaire to be checked with a large student sample. Between the period of March and May 1996, over 5600 full time undergraduates were successfully surveyed. The timing of the exercise was a major consideration, since students would have to be well settled into the semester and would have had close to a full academic year of experience in the institution they were attending at the time, allowing a more accurate account of their experience to be measured. To avoid conflict with their different examination schedules, each university was given the flexibility to administer the questionnaire

anytime from the middle of March till their examination period usually beginning in early June.

For most of the universities, the questionnaire booklets and detailed stratified sampling instructions were passed on to the liaison person nominated by the President or Vice Chancellor, usually an administrative section in each institution. In most cases this was the Registry or the Students Affairs Office. The planned primary sampling unit was the class/yeargroup. To enhance representativeness, stratification was planned for two characteristics viz. year of course and discipline area. Each university was responsible for random sampling of class/yeargroups within the strata. The questionnaires were then passed on to academic departments and lecturers for distribution in the designated class period. In two cases, where the university found it difficult to allocate class time for administering of the questionnaire, the booklets were sent directly to students accompanied by a covering letter giving the same instructions as a lecturer would have given to them in class. A pre-paid return envelope was also included. The questionnaire takes about 30-40 minutes for an average student to fill out in class. There were two main objectives in terms of the sampling strategy. Firstly, for the sake of the research project the overall sample needed to be as representative as possible of the population under investigation i.e. full time undergraduate students. On the other hand, because of the need to produce for each institution, a report on the results of the survey for their own students, each institutional sub population had to be large enough to be meaningful and statistically sustainable.

Because institutional characteristics might be an important explanatory variable it was felt to be important that in addition to the two stratification criteria mentioned earlier (i.e.

discipline and year of study) an additional form of stratification was applied so that each institution was represented in the sample in relation to its proportion in the overall population. Since each university would be responsible for the administration of the survey, the concept of a 'expected sample size returned' was introduced so that those administering the survey in their institutions had a figure to achieve.

In order to reach the overall target sample size, a total of 11,000 copies of the questionnaire were distributed. Universities which chose the preferred strategy of administration in class, on average, obtained a 60% response rate, while those who chose the mail shot method achieved a 43% return rate. Two university liaison officers indicated that it would be quite impossible to ask their staff to give up teaching time and so they insisted on administering the questionnaire by mailshot. Although they followed the detailed discipline and year of course stratification, the return rate was poorer and so a larger number of questionnaires were distributed in a 'second round' in order to come closer to the target sample size. A total of 5683 questionnaires were collected by mid June 1996.

The target population of this study was full-time undergraduate students. In order to obtain a representative sample, of the total population and within institutional sub populations, all of the institutions were included in the survey exercise. As was discussed above, in order to ensure representativeness, each of the institutions were urged to ensure that the sample chosen covered discipline areas and years of study broadly in proportion to the distribution in that institution's sub population. They were given detailed instructions about the breakdown of their institutional population into disciplines using the UGC's subject categories.

The 5683 completed questionnaires came from Chinese University of Hong Kong, City University of Hong Kong, Hong Kong Baptist University, Hong Kong Polytechnic University, Hong Kong University of Science and Technology, Lingnan College, and the University of Hong Kong. It must be pointed out that although the sampling processes was passed on to the various universities with advice and guidelines, it would be true to say that because the administration of the survey was not handled directly, full control of the process was not retained. That said, the day-to-day liaison with the universities highlighted no particular problem and the distribution among the disciplines and year of study seemed to be handled well.

The target sample sizes set for the overall population, each individual institution and the return rates are summarised in the table below:

**Table 5.1
Distribution and return**

Name of Institution	No. of Questionnaires Distributed	Expected Sample Size *	No. of q.'s Completed	Percentage of those distributed	Percentage of Expected Sample Size
Chinese University of Hong Kong	2,400	1,225	1,083	45%	88%
City University of Hong Kong	1,600	960	1,140	71%	118%
Hong Kong Baptist University	1,000	521	504	50%	97%
Hong Kong Polytechnic University	1,700	998	1,081	64%	108%
Hong Kong University of Science and Technology	1,000	620	542	54%	88%
Lingnan College	400	280	377	98%	135%
University of Hong Kong	2,500	1,110	956	38%	86%
TOTAL	10,600	5,714	5,683	54%	99.5%

* Based on an 'adjusted' proportion in the population to account for deviation in the various disciplines and year of study called for.

It is difficult to define the 'return rate' of questionnaires in the survey. The concept is not meaningful for CUHK and HKU in the above table since they insisted on conducting a

mailshot survey. The return rates of 45% and 38% (the lowest) are meaningful in the conventional sense. For the other universities, questionnaires were distributed to universities in relatively round numbers and within universities, they were (usually) distributed to lecturers to administer in their class. This procedure might be best illustrated through a real example. For BA in Public Administration at City University of Hong Kong, the sampling instructions called for approximately 114 students in that subject area, preferably from a second year class. The class list for BA in Public Administration Year 2 shows 132 names. The lecturer was given 132 plus 10% for 'wastage' i.e. 145 questionnaires. In class that day, only 120 students are present. By the end of the class, 116 students handed in the completed questionnaires. The wastage or non-return rate of questionnaires is $145 - 116 = 29$ (20%). But, in terms of the number of uncompleted questionnaires as a result of respondent choice, the non-response rate is $120 - 4 = 116$ (3%) or a conventional return rate of 97%.

From the table above it can be seen that even in those institutions where the questionnaires were completed in class, the number of questionnaires returned, compared to the number 'issued', varies considerably. This resulted partly from different techniques being adopted at each of the institutions. Although it was believed that the sampling and administration instructions were clear, in retrospect, it should have been anticipated that the various (usually) administrative and clerical staff would adapt the procedure to meet local needs. For example at Hong Kong Polytechnic University, the questionnaire was administered through out the University at the same time! There were, of course, no instructions to do this in the briefing notes. This meant that a relatively large number of clerical staff was deployed in a large number of classrooms. The teaching staff had been briefed but the use of many clerical officers probably increased the risk of some deviation

from the briefing notes. That said, the Hong Kong Polytechnic University sample was quite close to the expected sample size.

In contrast, at Lingnan College, all of the arrangements were made by one administrator from the Student Affairs Office who visited each selected class in turn and handled the administration herself. She then made repeated visits so that all 'missing' students completed the questionnaire. This obviously accounts for the very high completion rate at Lingnan College.

None of these deviations from the procedures were anticipated and, although they are not considered to be a major threat to the validity of the study, in retrospect, the administration arrangements and briefings should have been more detailed and supervised more closely. That said, in overall terms the survey has achieved a large ($n = 5683$) representative sample of the population of full time undergraduates in Hong Kong (42,477 in 1996) i.e. the sample is 13.4% of the population.

Completed questionnaires were 'cleaned' by hand and then prepared for scanning. This was not a trivial exercise as the mailshot questionnaires were folded when returned and this meant some considerable manipulation for the scanner. The completed questionnaires were scanned using an optical mark reader (Opscan 7). The database was converted into both SAS and an SPSS files for further analysis. Preliminary descriptive statistics were compiled, in order to prepare for each institution a portfolio of the results for their students. This had been agreed as part of the negotiations to gain entry to the field.

Conclusion

In this chapter, the basic research design for the study has been described. In doing so some consideration has been given to the various social science research traditions and their appropriateness to answer the questions posed in this study. It was concluded that a hybrid approach drawing on both the ethnographic and survey traditions should be employed. The process of choosing a well grounded, survey instrument was described and then the use of a modified Focus Group design to adapt the questionnaire to the local environment was described. It was concluded that by the end of the Focus Group process the CSEQ had been transformed into its Hong Kong equivalent the USEQ, (Universities Student Experience Questionnaire).

The procedure for gaining entry to the field was described together with some trade off decisions taken in order to try to achieve a reasonable return rate. Finally, the sampling process and administration procedure was described. It was concluded that, despite some administrative difficulties, the process had been sufficiently robust to be relied upon and that in the end a fully representative sample of the population under study has been obtained.

Chapter 6: Some Characteristics of the Student Experience in Hong Kong

Introduction

In this chapter, the descriptive findings of the study are presented. For comparative purposes, whenever possible, US data are presented. The choice of category of US universities to be used, is considered. Essentially the bulk of the contents of this chapter addresses the first of the two principal research questions, ‘What is the student experience in Hong Kong like (i.e. what are its qualities)?’ The chapter concludes with an account of the factor analysis which will be a key component of the multivariate analysis carried out on the ‘Estimates of Gains’ variables. The results of the factor analysis will be discussed in later chapters. The discussion in this chapter generally follows the order of variables and scales in the questionnaire from ‘Background Information’ through to ‘Perceptions of the University Environment’. The Hong Kong results are broken down by individual university since some of the differences between the universities will be of interest in the discussion. Throughout this chapter various observations are made about the results of individual items or scales. Consideration will be given to the overall impact of the results and the interaction between certain results in Chapter 8 (below).

Background Information

The results of the full scale survey exercise using University Student Experience Questionnaire (USEQ) were compiled into a comprehensive data base of student information. The dataset (5683 cases with 210 items) is large and yields data at a variety of levels. Much of that data, even at a descriptive level, is highly valuable and presents a

picture of the life of a student in Hong Kong. In the tables that follow and in the Appendices, in cases where the data are available, US norm figures are reported. The US data are presented mainly in order to provide a background or comparison against which the Hong Kong data can be better understood or at least illuminated. The US student experience, in itself, is not a central issue in this work. The US figures are taken from Kuh, Vesper, Connolly and Páice (1997) 'College Students Experiences Questionnaire: Revised Norms for the Third Edition'. This work reports the results of the administration of the CSEQ to over 50,000 students in the USA in 1996 coincidentally the same year that the USEQ was administered in Hong Kong. The US results are reported by category of University – Research, Doctoral, Comprehensive, Liberal Arts Colleges, General Liberal Arts Colleges, and Urban Universities. For various reasons the results of the Urban Universities were treated as tentative since they did not always meet the authors' strict criteria on minimal sample size (300 students). The US results are never reported as a total figure, so for comparative purposes one of the institutional types had to be selected.

The Hong Kong universities, it could be argued, are themselves spread across these institutional categories. Several have excellent international research credentials, produce doctoral graduates, and are comprehensive in subject coverage. One or two had their roots in the Liberal Arts College tradition. After considerable thought and consideration of the detailed description of the US categories, it was decided to use the category Comprehensive Universities. Unfortunately the authors do not list which universities are included in which category in order to make comparisons easier, however the Comprehensive Universities sample is the largest (17,637 students across 18 institutions) and was felt to represent best the range of institutional types in Hong Kong. So in the tables that follow, the US figures are taken from the CSEQ sample from Comprehensive

Universities. It should be noted that, like the Hong Kong sample, all of the respondents in the US sample are full time undergraduates.

Age Distribution

Table 6.1
Breakdown by age

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
22 or younger	83%	91%	82%	85%	77%	89%	73%	82%	75%
23-27	16%	8%	17%	15%	21%	10%	26%	17%	15%
28 and older	1%	1%	1%	0%	2%	1%	1%	1%	10%

n=5666

The age distribution among the sample of full time undergraduates as of June 1996 was as follows - 83% of the students fell into the age group of 22 or younger, 16% were between the age of 23-27, and very small proportion (<1%) of them were over 27. This reflects the general nature of the Hong Kong full time student population which is made up almost exclusively of school leavers. Any 'mature students' will normally be studying part time. To date there has been no policy of trying to attract mature students into full time higher education in Hong Kong. There is a higher proportion of students in the 28 and over category in the US sample than in the Hong Kong sample (10% as opposed to 1%). This should be borne in mind when interpreting results and, in particular, when making comparisons. Mature students will exert an effect in two ways. First, in the sample itself 10% of the 17,000 respondents are over 28 years of age. So their responses will have a direct impact on the aggregated results. Secondly, it would seem to be likely that such a large number of mature students will have an impact on the campus environment itself. This feature will not be present in Hong Kong universities.

Among the Hong Kong universities there seems to be little of note in respect of the age breakdown. CUHK has a noticeably lower proportion of students over 23 years of age and LC has a higher proportion in the over 23 years of age group. It is not anticipated that these differences will have any substantial effect on the responses from the various universities.

Gender

Table 6.2
Distribution of male and female students

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
Male	48%	39%	51%	37%	53%	71%	45%	43%	39%
Female	52%	61%	49%	63%	47%	29%	55%	57%	61%

n=5612

Overall, 48% of the respondents were male and 52% were female. Distribution of male and female in each institution were quite close in the sample, except for HKUST where 71% were male respondents. This university concentrates on science, technology and engineering and other technology based subjects, none of which traditionally have attracted large numbers of women students. In both HKBU and CUHK, the proportion of female respondents was also slightly higher than the other institutions. In their report on the 1996 US survey, Kuh et al (1997) report that the response rate from women to the CSEQ is usually higher than that from men. They illustrate this (Kuh et al. 1997, p 11) by indicating that the overall proportion of women undergraduates is 55% yet in the US sample 61% are women indicating (assuming randomness) that there has been a higher response rate from women. In the Hong Kong study, the response rate from men and women was not measured but the proportion of women in the student population is 52% indicating that it is likely that a better response rate was obtained from women than from

men. The gender balance of students within each university is not known but since the survey was random it is relatively safe to assume that the sub samples are representative of the sub populations. The high proportion of male students at HKUST will be borne in mind when discussing some of the responses from that particular university.

Institutional breakdown

Table 6.3
Breakdown by institution

	Distribution of student respondents (proportion in population)		
CUHK	1,083	19%	(22%)
CityU	1,140	19%	(15%)
HKBU	504	9%	(9%)
PolyU	1,081	19%	(17%)
HKUST	542	10%	(12%)
LC	377	7%	(4%)
HKU	956	17%	(20%)
Total	5,683	100%	

n=5668

The student sample in this study is proportionate to the distribution of full-time undergraduates in Hong Kong. The sample of 5683 included students from all seven UGC funded institutions. Overall, there were a total of 42,477 full-time undergraduates in the seven universities in Hong Kong in academic year 1995/96. The survey was therefore completed by just over 13% of the total population i.e. about one student in seven. The response rate was discussed in the previous chapter. Kuh et al (1997) do not report the overall response rate for the US sample nor do they describe the questionnaire administration and sampling process.

In general the two 'older' universities are slightly under-represented in the sample and the 'newer' universities over-represented. This is due mainly to the better completion rate in the latter than to any institutional differences. As noted earlier, the two older

universities, HKU and CU distributed the questionnaire by mailshot rather than in class which did result in much lower returns..

Year of study

Table 6.4
Breakdown by year of study

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
Year 1	39%	34%	31%	41%	52%	46%	34%	34%	26%
Year 2	32%	30%	43%	34%	27%	31%	24%	30%	21%
Year 3	25%	22%	26%	25%	19%	22%	42%	31%	18%
Other	4%	14%	0%	0%	2%	1%	0%	5%	36%

n=5651

The student sample quite evenly represents students from all years of study. Overall, 39% of the respondents were first year students, 32% were second year students, and 25% were in their third year study when they completed the survey. There was a small percentage of students who fell under the 'other' category. These students are mostly like to be enrolled in professional degree programmes such as medicine or architecture. These percentages are broadly in line with the distribution in the overall population of full time undergraduates.

University Residence

Table 6.5
Students who have lived in university housing/hostel

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
Yes	23%	55%	0%	0%	0%	41%	32%	30%	68%
No	77%	45%	100%	100%	100%	59%	68%	70%	32%

n=5636

During the academic year, students from the different campuses in Hong Kong have different experiences with university housing, depending primarily on which institution is

able to provide them. Overall, 23% percent of the student sample reported having lived in university student housing during the academic year. Over half of the respondents from CUHK reported having lived in a student hostel, in complete contrast to the nil percent from CityU, PolyU and HKBU which, are not equipped with student residences. This certainly points to very different patterns of student experience among the seven institutions. It will be interesting to see whether this factor is significant in terms of influencing the student experience.

Interestingly, although at the time of the survey in Hong Kong the three new universities had no student accommodation on or off campus whatsoever, the Hong Kong government has recently (Policy Address, 1999) announced plans to build student residences for those universities. In the US a higher proportion of the sample (68%) have lived on campus than the overall Hong Kong sample (23%). But at CUHK, which is more remote than some of the other universities, the 55% figure does not seem too far away from the US figure. Hong Kong students are seldom allowed to stay on campus for the whole of their University career. Residence places are strictly controlled.

Table 6.6
Student housing arrangements

	Overall	US
University	15%	41%
Share room	1%	N/A
Apt near campus	2%	13%
Apt away	6%	29%
W/ parents	76%	16%
		n=5513

Closely related to the student campus housing issue is the question where students live during the academic year. The Hong Kong survey results indicate that the majority of

students live with their parents while attending university. This is a unique feature of the student experience in Hong Kong. Compared to a much larger proportion of students in countries like the UK or the US where students ‘leave home’ to go to university/college and live apart from their parents during their study in university, the living arrangements for students in Hong Kong usually means staying in the parental home. That said, a similar pattern is found in certain geographical regions of the UK (e.g. West Central Scotland). Fifteen percent live in university housing, and close to 10% reported living in private housing which is not the family home. However the US contrast is striking. Only 16% percent of the US students live in the family home whilst attending college or university; yet almost 80% of the Hong Kong students were, at the time of the survey, living at home. Many of the reasons for this are obvious. In the main, most of the Hong Kong universities are ‘commutable’ from most of the SAR. Land and housing in Hong Kong are both very very expensive so university housing will be expensive to build and rented accommodation is also expensive.

Grades Achieved at University

Table 6.7
Students self reported grades

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU
A	9%	12%	7%	7%	8%	9%	8%	8%
B	46%	68%	30%	57%	40%	52%	41%	41%
C/D	44%	20%	62%	35%	51%	37%	50%	49%
D/F	1%	0%	1%	1%	1%	2%	1%	2%

n=5631

Overall, the vast majority (90%) of the student sample reported earning mostly ‘B’ or ‘C/D’ grades in university. There is a slight difference in the distribution of grades among the institutions which students were attending. For example, results showed an interesting

contrast between the grades students from CUHK have been earning and grades CityU students have been earning. Sixty eight per cent of respondents from CUHK reported earning mostly 'B's, and 20% earning 'C/D's, where as 30% of the respondents from CityU reported earning 'B's, and much higher proportion, up to 60% reported earning mostly 'C/D's. The grading schemes of the Hong Kong universities differ. During the focus group discussions various models of reporting grades were discussed. In some universities a 'D' grade is a fail grade while in some others it is a pass grade and credit will be awarded. The compromise C/D (implying pass) grade was arrived at together with the D/F (implying fail) grade. Although this satisfied most focus group respondents there may be some reason to believe that it may have been misinterpreted or misunderstood by some respondents to the survey. The US grading system used in the CSEQ is quite different and so the US results are not reported in this section.

The distribution of grades will be considered again later but some of the contrasts are quite striking. The individual universities are very sensitive about this kind of material being discussed but these figures tend to confirm some of the occasional suggestions in the media that very few students are given 'fail' grades in Hong Kong and that especially in the newer universities there are pressures and tendencies to grade poor students at the 'C/D' or 'bare pass' level rather than awarding a 'fail'. That said, all but one of the Hong Kong universities (unlike the usual US practice) boasts an external examiner system like most of the Commonwealth university models. One of the purposes of such a scheme is to ensure that grades are calibrated to international standards. External examiners are usually asked to formally attest to that fact.

Field of Study

Table 6.8
Major field of study being students' first choice in priority

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU
Yes	69%	83%	60%	57%	63%	70%	65%	80%
No	31%	17%	40%	43%	37%	30%	35%	20%

n=2440

The first striking issue about this question of field of study is that so few students answered it. There must be some rational explanation for this and it may be, simply, that students cannot remember what their first choice was. After all the JUPAS form (Joint University Programmes Admissions System) asks students to enter up to 30 programme university choices in priority order. Students in Hong Kong reportedly, think very long and hard about how to structure their priorities in order to try and achieve the optimum result (POSTE Report, 1996). It is certainly not as simple as listing one's first choice course at one's first choice university. To do so and then fail to meet that year's competitive entry standard, might mean that unexpected lower priorities might come into play. In this system, students are given one offer of a place only. If it is turned down, no other offer will be made that year. This would seem to be the most likely explanation as to why so few students answered this question.

In Hong Kong, students are admitted to university and academic programmes by a computer system according to A level examination grades and expressed course preferences alone. Much of the time, students do not get to enrol in either the university or academic programme of their first or even lower choice. The results of this survey

indicate that 69% of the students are studying their first choice major subject and 31% are taking something other than their first choice of subject. In CUHK, HKU and HKUST, the problem of mismatch with students and main subject appears to be less significant than in institutions such as CityU, HKBU, PolyU and Lingnan College. The latter four institutions generally receive students with comparatively poorer A-level scores.

Because of the different nature of US university admissions system there is no equivalent item in the US version of the CSEQ. It is striking nonetheless that in Hong Kong's competitive and elitist education system that a substantial number of students cannot gain entry to the subjects of their first choice.

A recent government report (Education Commission, 1999) has proposed the introduction of a system of flexible credit transfer. One supposes that it is part of the intention of this proposal to redress some of this balance by allowing some institutional and disciplinary transfer after initial admission. The reaction of the universities to this proposal has been quite negative.

Parents' Education

Table 6.9
Did your parents attend university?

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
No	92%	91%	93%	93%	94%	92%	94%	91%	52%
Both parents	2%	3%	2%	2%	2%	2%	1%	2%	21%
Father	5%	6%	5%	5%	3%	5%	5%	6%	17%
Mother	1%	0%	0%	0%	1%	1%	0%	1%	10%

n=5645

The vast majority of the Hong Kong student sample reported that neither of their parents graduated from university. It is clear that higher education institutions in Hong Kong are populated with mostly first generation university students. The continuous expansion of higher education has allowed a much large proportion of the school leaving population to participate in a university experience which was not available to many of their parents' generation.

In the US, just under half of the student population sampled had at least one parent who was a university graduate. Does this mean that many Hong Kong students move on to higher education with scant knowledge of what to expect? Certainly parents must be an important source of information about such things but it is probably more accurate to acknowledge that students or aspiring students will have older friends or former school mates who will be able to tell them what to expect at university. Still, the lack of higher education experience of many Hong Kong parents will, one suspects, be something of a factor in preparing their offspring for university when the time comes. A much higher proportion of US students will not lack that background experience which will aid preparation.

Enrolment in an Advanced Degree

Table 6.10
Students who expect to enrol in advanced degree

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
Yes	53%	48%	56%	45%	56%	53%	54%	54%	72%
No	47%	52%	44%	55%	44%	47%	46%	46%	28%

n=5636

When the Hong Kong students were asked about their future plans and aspirations, 53% of them responded that they expect to enrol for a more advanced degree after graduation from university. There is no drastic difference in the responses between the Hong Kong institutions.

In the US, a much higher proportion (72%) do expect to take a higher degree at some point in the future. The differences in scores between Hong Kong universities are not particularly striking. The figures for the US students is somewhat higher (72% as opposed to 53% in Hong Kong). Given the history of lack of opportunity on the part of Hong Kong school leavers to enter higher education at all, it is perhaps surprising that, in one generation, almost as many Hong Kong students as their US undergraduate contemporaries would expect to enrol in a higher degree after graduation. Indeed, given the many generations of wider higher education participation for US students, it is arguably very pleasing that such a high percentage of Hong Kong students have aspirations beyond their first degree. It would be interesting to conduct further research to find out how many students both in Hong Kong and in the US actually do take advanced degrees.

International Experience

Table 6.11
International exchange programme/ overseas conference experience

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU
Yes	6%	7%	4%	9%	7%	3%	11%	6%
No	94%	93%	96%	91%	93%	97%	89%	94%

n=5625

International exchange and overseas learning opportunities are generally held, in the west to be valuable university learning experiences, allowing students to broaden their horizons, enhance their academic study, and interact with people from different backgrounds and cultures. However, such opportunities are quite limited for students in Hong Kong. Only 6% of the respondents reported having participated in international exchange programmes or overseas conferences. The great majority was not exposed to such learning opportunities.

Once again there is no equivalent question in the CSEQ, so US norm figures cannot be reported for this item. Eleven per cent of LC students report having participated in an international or overseas exchange programme or conference. This is the highest of the Hong Kong institutions and would seem to be commensurate with that institution's mission and ethos with respect to Confucian values and very close links with mainland China. The same is true for HKBU which reports the second highest figure at 9%. This study was conducted before Hong Kong reverted to the PRC. It may be therefore that, post 1997, more opportunities to visit China will arise for Hong Kong undergraduates. This may broaden their horizons quite considerably.

Time Spent on Studying

Table 6.12
Time students spend on course related activities in a week

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
50 hrs/wk or more	21%	25%	17%	12%	18%	41%	7%	25%	8%
40 hrs/wk	24%	28%	23%	22%	22%	29%	20%	22%	19%
30 hrs/wk	33%	31%	34%	39%	38%	19%	39%	32%	38%
20 hrs/wk	14%	11%	15%	17%	15%	6%	25%	15%	23%
< 20 hrs/wk	8%	5%	11%	10%	7%	5%	9%	6%	12%

n=5637

Students were asked how many hours they usually spend on course related activities in a week including both time spent in class and time spent on studies. Overall, the largest percentage, 33% of students, reported spending about 30 hours and 24% reported spending about 40 hours on course related activities in a week. Twenty one percent reported spending 50 hours or more, where as 14% spent 20 hours, and 8% spend less than twenty hours a week on course activities.

On the face of it, there seem to be some more interesting observations, in that a significantly larger proportion of students from HKUST reported spending a lot more time on course related activities, when compared to students from the other institutions. An exceptional 41% of them indicated that, on a regular basis, they spend 50 hours or more in a week either in class or studying. By contrast less than 10% of LC students and US students reported such levels.

There are similarities between the findings from some institutions. For example there is a similarity between the findings from the traditional universities HKU and CUHK, and similarities between students from the former polytechnic universities CityU, PolyU, and HKBU. The high proportion working 50 hours a week reported by HKUST students is very interesting. In the earlier focus group stage, although the HKUST students reported that they were very happy to have the 'high status' of attending what they perceive to be the most prestigious university, they are unhappy about the workload.

As can be seen from the table, the US students on the whole, report spending much less time in course related activities than the Hong Kong students do. The contrast is quite striking. Taking the two extremes, 70% of HKUST students report that they spend 40

hours or more per week on course related activities in contrast to only 27% the US sample. It would be interesting to know whether the reason for this difference is due to a higher proportion of time being spent in class in Hong Kong or whether the bulk of the difference arises from time spent outside the class room reading or working on assignments. As will be discussed later, the US students report having to produce more term papers and assignments than their Hong Kong counterparts so it may be unlikely on the face of it that that is where the differences lies. Unfortunately, this study did not collect data on class contact hours so the impact of that aspect cannot be assumed. One possible explanation is that, because they are learning in a foreign language, Hong Kong students have to spend comparatively more time in reading and writing than their US counterparts.

Part-time Work

Table 6.13
The average amount of time students spend working on a job in a week

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
None	47%	49%	43%	37%	48%	60%	45%	48%	39%
< 10 hrs/wk	39%	43%	40%	42%	35%	28%	37%	42%	16%
15 hrs/wk	7%	5%	9%	10%	8%	6%	10%	6%	13%
20 hrs/wk	4%	1%	4%	7%	6%	3%	4%	2%	16%
30 hrs/wk	2%	1%	2%	2%	2%	1%	3%	1%	9%
> 30 hrs/wk	1%	1%	2%	2%	2%	2%	1%	1%	8%

n=5641

In Hong Kong as in many other higher education systems, it is quite common for students to spend a proportion of their time working on a job while attending university. During the academic year, many full time students support themselves by working at part time or weekend jobs. The survey results indicate that more than half of the student sample was working while attending university. Thirty nine percent of the respondents

indicated that they spend less than ten hours a week working, while 13% spend between 15 to 30 hours a week on their part time jobs. A small number of students did report spending more than 30 hours on an average working while attending university full time.

Except in the case of HKUST, the proportion of students working part time is quite similar among the universities in Hong Kong. The majority of the students who have a part time job would spend about ten hours or less a week working outside of university. Interestingly, HKUST students have the highest proportion of non working students. One can infer that there may be a relationship between that fact and their reported heavy workload. However if there is a causal relationship it would be difficult to surmise which is cause and which is effect.

A higher proportion of the US students are working and working longer hours than the Hong Kong students. As was noted earlier, the US students spend less time on course related activities which would allow them to spend more time working. However, as with the possible relationship between university workload and part time jobs suggested in the case of the HKUST students, if there is an association between those two variables it would be difficult to determine the causal direction if any exists.

University Expenses

Table 6.14
University expenses paid by students' parents/family

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
All	40%	41%	37%	36%	37%	48%	34%	47%	34%
More than half	19%	18%	17%	25%	20%	22%	21%	17%	16%
Less than half	15%	13%	15%	15%	16%	13%	17%	13%	13%
None/Little	26%	28%	31%	24%	27%	17%	28%	23%	37%

n=5651

University tuition fees and expenses in Hong Kong have been increasing rapidly in the last few years creating a greater financial burden for students and their family. The findings indicate that 40% of the Hong Kong respondents' university expenses are paid for entirely by their parents and family. A total of 34% receive some partial financial support from home, and 26% receive very little or no financial help from their parents while attending university.

Fewer HKUST students have to shoulder the total fees burden than students from the other universities. Whether that is because they have less time or opportunity to work, because of their heavy workload, or vice versa it is difficult to surmise. A higher proportion of the US students (37% compared to the Hong Kong overall figure of 26%) receive no or little help from parents. Some of this difference may be explained by the higher proportion of mature students (aged 28 or over) in the US sample than in the Hong Kong group (10% compared with 1%). It would normally be expected that mature students over 28 would have had some years of financial independence and be used to supporting themselves. Thus they could not rely so heavily on help with university

expenses from parents or other family members. Further investigation would have to be carried out in order to determine whether or not this is indeed the case.

Student Involvement and Engagement

The substantial part of the USEQ is made up of a list of activities which students are likely to become involved in whilst at university. There are a total of 115 of these activities in the USEQ, grouped into the activity scales listed in the questionnaire.

Many of the events and experiences take place in educational settings that are common to all universities. Facilities such as classrooms, libraries, recreational and sports facilities, residences, and computer facilities exist on all of the sites. Other experiences are not necessarily associated with physical facilities but are also crucial to the university life for students. These include contacts with staff members, student acquaintances, experiences in reading and writing, participation in clubs and student organisations, and experiences related to personal growth and understanding. These aspects of the university life provided the structure for organising the 115 activity items in the questionnaire. There are 10 to 12 items in each activity scale. The theory which underpins this section of the original CSEQ is that higher levels of engagement are desirable for positive learning outcomes. It is largely in students' responses to these items that greater understanding of the student experience of higher education in Hong Kong will be found.

The structure of each of the activity scale questions is broadly similar. Students were asked the following question:

During the current academic year, about how often have you done each of the following?

The student responds by indicating 'never' which would be assigned the value one, 'occasionally' which would be assigned a score of two, 'often' which would be assigned a score of three, and 'very often' which would obtain the value four. In the original CSEQ each scale was made up of ten items which assigned values as above meant that the sum for each scale lay in the range 10 - 40. However, during the adaptation process, some items were added to scales thereby extending the minimum and maximum value.

Responses from students were computed into a normalised score for each activity scale. The normalised score assumes ten activities in the activity scale, the student's score therefore range from a possible low of 10 to a high of 40. Each activity scale indicates how frequently students are engaged in that category of experience in university. Since the activity scales scores will become an important feature in the more detailed analysis which follows, it is necessary to consider their reliability. The usual statistical method for measuring the reliability of a scale is to apply a statistical technique – Cronbach's alpha. This technique allows the researcher to judge whether the items in a scale are internally consistent with each other. An alpha coefficient of 0.7 or above is usually taken to be sufficient to show reliability. The alpha coefficients are set out in Table 6.15 (below).

Table 6.15
Cronbach's alpha coefficients

Scale		Alpha Coefficient
Library Experiences	(LE)	0.752
Course Learning	(CL)	0.780
Experiences with Lecturers	(EL)	0.840
Athletic and Sports Facilities	(AS)	0.880
Clubs and Organisations	(CO)	0.835
Student Acquaintances	(SA)	0.853
Experiences in Writing	(EW)	0.872
Experience with Computers	(EC)	0.745
Personal Experiences	(PE)	0.820
General Scientific Knowledge	(GS)	0.890
Campus Residence	(CR)	0.832
Information in Conversations	(IC)	0.749
Topics of Conversation	(TC)	0.873
Estimates of Gains	(Gains)	0.912

The final three scales 'Information in Conversations', 'Topics of Conversation' and 'Estimates of Gains' are strictly not activity scales but since they follow the same format as the other scales and they were altered during the questionnaire adaptation process it was felt that their reliability should also be tested.

All produced a coefficient above 0.7 and so the reliability of the scales for Hong Kong can be assured. This is especially important for the Experiences with Computers scale which is completely new and did not appear in the original US version the CSEQ. The normalised activity scale score means are set out in Table 6.16. The detailed institutional and US responses to the activity scale items will be discussed thoroughly in the sections which follow but already there appear to be a number of interesting differences. Of the eleven scales, the US norm is higher than the Hong Kong overall score on seven of them. Only on 'Library Experiences', 'Clubs and Organisations' and 'General Scientific Knowledge' is the Hong Kong figure higher. Some of the differences are quite striking.

The largest differences are in the scales ‘Experiences with Lecturers’, ‘Student Acquaintances’ and ‘Experiences with Writing’. The differences in the mean scores are all more than three scale points.

Table 6.16
Normalised scores on the activity scales for each of the universities

	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US	t	p
Library (LE)	21.66	21.25	21.57	22.07	22.35	22.02	22.01	20.85	19.94	12.98	P<0.01
Course (CL) Learning	25.76	26.26	25.25	25.60	25.76	25.10	25.43	26.42	27.71	22.92	P<0.01
Lecturers (EL)	17.19	17.08	16.94	18.51	17.69	17.27	18.29	15.86	20.27	37.43	P<0.01
Athletic & Sports (AS)	17.47	17.00	17.00	19.46	18.14	17.82	17.34	16.34	18.93	14.73	P<0.01
Club & (CO) Organizations	18.88	20.16	17.49	20.12	17.69	18.72	19.62	19.29	18.43	4.54	P<0.01
Student (SA) Acquaintances	20.21	20.54	19.56	20.80	19.74	20.23	20.67	20.65	24.89	47.08	P<0.01
Writing (EW)	22.18	22.01	22.36	23.23	22.48	21.39	23.93	21.01	25.25	33.49	P<0.01
Computer (EC)	24.50	23.97	24.21	24.98	25.47	28.09	22.40	22.99	--	N/A	--
Personal (PE)	20.52	20.59	20.08	22.01	20.84	19.76	21.63	19.84	22.22	19.42	P<0.01
General (GS) Scientific Knowledge	18.65	17.87	18.00	18.18	19.15	21.76	17.58	18.66	18.55	NS	NS
Campus (CR) Residence	21.52	21.56	-	-	-	21.53	20.32	22.40	23.95	26.4	P<0.01

This table alone reveals some interesting differences e.g. the high score for computer engagement at HKUST, the relatively high levels of engagement all round at HKBU. In addition some interesting comparisons can be made to the US norms for the CSEQ activity scales. These differences will be discussed more fully in Chapter 8.

The T-test figures shown in the table are in relation to the differences between the mean scale scores for the overall HK sample (overall) and the overall US sample. It is very important to note at this point that, because of the very large sample size relatively small differences in the means can be statistically significant. For example the difference

between the means in Clubs and Organisations is 0.4 on a 30 point scale, yet it is statistically significant at the one percent level. In discussing this result it is more likely that the similarity of the two scores would be remarked upon than the differences

Further Descriptive Findings

When students attend university, there are some things they all do regardless of which university they go to. In Appendix 2 there are a number of tables which set out some of the results of the study. These tables set out the percentage of students who engage in that activity frequently (i.e. who answered 'often' or 'very often' to that particular item. Table 2.1 sets out those activities that the majority of students engage in (i.e. where the 'overall' figure is greater than 50%). From the table it can be seen that the common activities that the majority of students overall frequently engage in, are those that fall under the category of 'Library Experience', 'Course Learning Experience', 'Experience with Writing' and 'Experience with Computers'. These four categories of items are all related to students' learning processes. The US data are not available in such a detailed form so it is not possible to provide a comparative frame of reference. Interestingly, there seems to be something of a pattern emerging as to which activities a **majority** of students do or do not engage in. With the exception of the 'Participated in class discussions' items, most of the activities are individual actions which do not involve other people whether it be fellow students or lecturers.

As will be seen from the later discussions (Chapter 8 below), when the responses to individual items are considered, Hong Kong students do not report high levels of engagement in activities associated with interaction with other people. Instead, they respond in greater numbers to items which relate to individual pursuit of mainly course

related or 'work production' items. In fact, of the seventeen individual items that a majority of students report frequent engagement, fifteen could be said to be directly or indirectly related to purposes or outcomes which deal with assessment (i.e. revision for examinations or the preparation of a term paper or other coursework). This would seem to add some weight to the idea that the assessment strategies employed in a course or programme are key determinants in how students approach their learning. This 'backwash' effect of assessment has been described by a number of researchers (see for example Biggs (1992)).

As was described in Chapter 1 the seven institutions in Hong Kong fall into four broad types viz. 'traditional universities' of the British Commonwealth type: the University of Hong Kong (HKU), and The Chinese University of Hong Kong (CUHK); one 'new' university that runs on a US model: The Hong Kong University of Science and Technology (HKUST); three 'former Polytechnic' universities: The City University of Hong Kong (CityU), The Hong Kong Baptist University (HKBU) and The Hong Kong Polytechnic University (PolyU); and one liberal arts college that offers degree programmes: Lingnan College (LC). Each institution has its own unique history, philosophy and ethos as well as profile of students and members of staff. The variations in levels of student engagement in these university activities could well be explained by a variety of factors, including university environment, course structure, availability of facilities, campus ethos and student culture. In some categories of activities, there are noticeable similarities between institutions of the same model and they do show some interesting contrasts with the other types of institutions. The levels of engagement are set out in Appendix 2 in Tables 2.1 to 2.13.

As was noted from Table 6.16 (p. 153), the overall Hong Kong scale scores for library experiences are higher than the US norm (HK=21.66, US=19.94) and each of the Hong Kong institutions individually report a higher scale score. There may be good and sound 'student approaches to learning' reasons to explain this difference but in the Hong Kong context, there are some obvious practical reasons. The majority of Hong Kong students live in the parental home (79 %). In that environment it is unlikely that many students will have dedicated space to study. As a consequence the university libraries may be used more heavily as a study space than may be the case in the US and other parts of the world. The individual items on the Library Experience scales (Appendix 2, Table 2.2) do not reveal many inter-institutional variations.

In the case of Course Learning (Table 2.3), it can be seen that students generally take notes in English (80% of respondents reporting frequent engagement) as opposed to Chinese (23%). Interestingly, fewer HKU and HKUST students report frequent incidence of taking notes in Chinese (9% and 13% respectively) than the overall population. Those universities have a culture more heavily weighted towards the use of the English language as both the explicit and implicit medium of instruction. Again, on the question of 'trying to explain material to another student or friend' the percentage of students reporting frequent engagement (31%) is lower than most of the other items, suggesting again that Hong Kong students may be shy of involving others in their learning strategies. The only other interesting result from this table may be the percentage of students reporting frequent 'participation in class discussions' 31% at HKUST. There is no immediately obvious explanation for this other than to suggest that it may be related to the science and technology discipline bias at HKUST and that those subject areas may not be as

conducive to the use of class discussions as a teaching or learning medium. Overall, the levels of engagement seem high.

From Table 6.16 (p. 153) it could be concluded that the scale score for 'Experiences with Lecturers' at 17.19 was considerably lower than the US Norm of 20.27. The detailed item by item response is set out in Table 2.4. Across the board, very small percentages of students report frequent engagement in the list of items. None of the percentages are higher than 40% and for some individual university scores, only one or two percent of students report that they frequently take meals with members of staff or discuss personal problems or concerns with them. The results in this table lend even more evidence that there may be less of an inclination among Hong Kong students to engage others even in pursuit of better learning outcomes. The figures for specifically course related issues are much higher than they are for social or pastoral items but nonetheless this does seem to be a recurring theme which may have to be considered again. Interestingly, higher proportions of students report engagement with a Lab-Demonstrator or Teaching Assistant who will, most likely, be closer in age to the students and perhaps seen as being less threatening than full time lecturers.

The detailed item analysis figures from the Athletic and Sports Facilities activity scale (Table 2.5) reflect few obvious differences between the levels of engagement between each of the institutions or between the Hong Kong institutions and the US norms. This reflects the similarities between the overall scale score comparisons also. For some universities – CUHK and HKBU in particular, at 35% and 50% respectively, a much higher proportion of students than the other universities report that they have taken a Physical Education course. This is much higher than the 8% who report frequent

engagement at HKU. One reason for this is most likely to be the emphasis at CUHK and HKBU of a well-balanced, well-rounded curriculum in which general education (including an option in physical education) is a compulsory component. In these two universities credit can be earned for Physical Education. This may suggest one way in which student experiences, which assist the achievement of desirable learning outcomes, may be promoted.

In the same way, the overall scale scores for the activities associated with Clubs and Organisations show few obvious differences. The overall Hong Kong score of 18.88 (on the 10 to 40 scale) is close to the US norm of 18.43. The scale scores of the two former polytechnic universities (CityU and PolyU) at 17.49 and 17.69 are similar yet lower than the Hong Kong overall score as well as the US norm. Scrutiny of the individual item percentages in Table 2.6 does not shed any light on this except that participating in a student election seems to elicit similar responses across the universities. Where CityU and PolyU seem to differ from the others is on issues such as attending club meetings, discussing student union issues and becoming involved in committees. The only reason for this difference might be because these two universities in particular have a substantial provision of part time (especially evening) provision. The influx of 10,000 plus evening students into each campus may overwhelm facilities to such an extent that the opportunity and effort to organise and participate in clubs and organisations are too great. However, since the US norms and HK overall scale scores are similar there is no evidence in this case to show that Hong Kong students are less disposed to interacting with others as part of their student experience.

In the case of the Student Acquaintances scale (Table 6.16, p. 153), the US norm at 24.89 is substantially higher than the Hong Kong overall scale score (24.89 and 20.21 respectively). Since this scale is composed of items which deal with talking to, or holding discussions with fellow students, this may help shed some light on the question of interaction with fellow students as part of the learning process. Clearly, substantially more US students report frequent engagement in discussions with fellow students than do their Hong Kong contemporaries. Once again the results from the two former polytechnics (CityU and PolyU) seem to stand out from those of their sister institutions. Both show a lower scale score (19.56 and 19.74) but the differences become even more apparent when Table 2.7 which sets out the individual scale items is considered. When the individual items are examined it can be seen that the percentage of students reporting frequent engagement in discussions is consistently lowest across all items relating to students with different main subject areas and interests.

The solution to this conundrum may lie in the nature of these universities' programme and course structures. Like many of the British polytechnics upon which they were modelled, both of these universities have vertical course structures. That means, basically, that undergraduates are taught in the same course and year group throughout their academic careers. This is in contrast to the traditional universities and the liberal arts college/university which have programmes which allow students much more freedom to choose certain classes and subjects. Students in these universities have many more opportunities to meet and interact with students of other disciplines and who, by implication, may have other interests and views. It cannot be concluded, at this stage, that such broader interactions have a positive effect on learning outcomes but it would seem to be reasonable to suppose that the vertical course structure design reduces the

opportunities for engagement with students outside their discipline or class group. In the factor analysis, which follows, it may be that it will be possible to find further clues about this question.

The scale scores for 'Experiences in Writing' again show a higher level of engagement score for the US norm (25.25) as opposed to the Hong Kong overall score (22.18). An examination of the individual item percentages in Table 2.8 reveals one or two interesting differences between the universities. The most interesting features are the lower percentages of students at the three universities CUHK, HKU and to a lesser extent HKUST, who report frequent interaction with a member of staff to discuss written work. There is no obvious reason for this except, possibly, a discipline bias in the sub samples from these universities. In those disciplines where less sustained discursive work is required it may be that there is less of a need to seek advice from staff on such matters. On the other hand, the issue of 'making an appointment to talk to a lecturer who marked your paper' would seem to apply irrespective of discipline. Nonetheless, this possible explanation would be worthy of further investigation.

The 'Experiences with Computers' scale has no US norm since a similar scale did not exist in the US version – the CSEQ. (Interestingly, the planned fourth edition of the CSEQ does now include a scale similar to that of the USEQ to measure levels of engagement with computers.) Nevertheless, it will be interesting to examine the differences between the Hong Kong institutions. In that regard, the differences in scale scores tell us very little except that HKUST's scale score at 28.09 is much higher than any of the other universities (24.50 overall). In the individual item scores in Table 2.9 it is apparent that a large proportion of students frequently engage in activities which involve

the use of a computer. The most frequently used activity is word processing, suggesting that students are using computers to prepare their course work, term papers and other assignments. Most Hong Kong university teachers now demand course work assignments to be word-processed. Between the universities, at HKUST, a very high proportion (62%) of students report frequent use of the internet, whereas the next highest (46%) is reported by CUHK students. This is perhaps not surprising given HKUST's technology discipline bias and also in light of the fact that the new purpose built campus is always recognised locally as being at the leading edge where the provision of technological resources is concerned.

Turning now to the Personal Experiences scale (Table 6.16, p. 153), the US norm on the scale score at 22.22 is higher than the Hong Kong overall score which is 20.52 but not much higher than HKBU at 22.01. So, there is not a great deal to be concluded from that. Looking at the individual item results in Table 2.10, there seem to be few, if any, obvious patterns. The percentages reporting frequent engagement at HKBU are, in the main, consistently high and at HKUST consistently on the low side. There would seem to be no obvious reason why this would be the case. There may be a gender effect, of course, since the HKUST sample is roughly 71%:29% male to female whereas at HKBU the ratio is reversed at 63%:27%. Once again, the analysis of this scale does not provide much further evidence that Hong Kong students engage much less with other individuals during their higher education experiences.

The next activity scale to be discussed is General Scientific Knowledge. The overall Hong Kong score at 18.65 is slightly higher than the US norm of 18.55. But three of the Hong Kong universities: HKUST (21.76), HKU (18.66) and PolyU (19.15) are higher

than the US norm. When the individual item percentages are examined, some quite interesting phenomena can be observed. At HKUST, the percentage of students reporting frequent engagement in activities related to the acquisition of General Scientific Knowledge is the highest in all but one item. This is perhaps unsurprising given the discipline balance within that university which is, as has been said before, heavily weighted towards science and technology. Both LC and HKBU are towards the lowest end of the spectrum, a fact which would support the notion that disciplinary background may be playing an important role here since both of those universities emerged from a 'liberal arts' college background.

Estimates of Gains

Table 2.12 sets out data on the responses to the individual Estimates of Gains items. The first striking fact is that a majority of Hong Kong students report gains ('quite a bit' or 'very much') in only five of the 30 possible items, whereas the US students report gains in thirteen of a possible 24. Secondly, a higher percentage of US students report gains in all but four of the Gains items. All of these four items are related to science and technology. In all others, greater numbers of the US students report gains.

Having considered the activity scales results it would seem to be reasonable to examine the Estimates of Gains variables in the same way. The 30 individual Gains items are difficult to examine without some structure or form. It would be helpful if they could be grouped together in some meaningful way. For the purposes of a later multivariate analysis, the Gains items were subjected to a factor analysis. A seven-factor model was obtained with relatively robust factor loadings. The seven factors were:

General Education
Cognitive and Intellectual Development
General Scientific Knowledge
Civic and Moral Development
Language and Communications
Personal and Social Development
Vocational and Career Development

The factor analysis will be discussed fully in the next chapter, where particular attention will be paid to issues of reliability and validity in the context of that particular analysis. The purpose here is simply to use the factors and the items which made them up, as an organising framework for considering the Gains items.

As an initial step, the three Gains variables with the highest factor loadings in each of the factors will be considered. This is, of course, somewhat arbitrary but in the absence of any other obvious framework, it would seem to be a reasonable way of proceeding. The Table setting out the items with the highest factor loadings for each of the seven factors is set out in Appendix 5.

General Education

Taking the three most important variables which make up the General Education factor to begin with, it can be seen that greater proportions of the students in the US (28%, 30% and 47% respectively) report gains from their higher education experiences than the Hong

Kong students (23%, 24% and 23%) in the areas of 'Art, Music and Drama', 'Literature' and the 'Importance of History'. Of the three items, the greatest difference is found in the item 'Seeing the importance of history for understanding the present and the past', (23% in Hong Kong as opposed to 47% in the US). The difference of 17% is much larger than the other items at 5% and 6% respectively. Among the Hong Kong universities, more HKBU students report gains in these areas than the other universities. HKBU has an explicit mission to develop the 'whole person' and includes in its curriculum compulsory general education modules. This policy may be bearing fruit. That said, there is still a clear difference in the percentages of students from the US reporting gains in the General Education variables than their Hong Kong counterparts. That the biggest difference arises where history is concerned is interesting. Hong Kong's history is a very complex and delicate issue and was particularly so at the time when the survey was conducted. Certainly Hong Kong's colonial history is considered to be politically incorrect. This may be influencing the students' responses.

Cognitive and Intellectual Development

Turning now to the variables which have the greatest effect on the Cognitive and Intellectual Development factor a quite different picture emerges. The three Cognitive and Intellectual Development variables have similar results in both Hong Kong and the US. The percentages are 48% US versus 45% Hong Kong ('Intellectual enquiry'); 71% US versus 63% Hong Kong ('Ability to learn on your own'); and 59% US versus 59% Hong Kong ('Ability to think analytically'). Clearly the student experience in each of the societies is very similar in this area when it comes to students reporting gains. Arguably, intellectual development is less 'culture bound' than other types of learning outcomes.

Among the Hong Kong universities there are few interesting differences save that the two 'traditional' universities (HKU and CUHK) report the highest percentage of students who have made gains on each of the three variables.

General Scientific Knowledge

The third factor grouping to be considered is General Scientific Knowledge. In the case of the three variables which contribute most to the factor, there is a greater percentage of Hong Kong students who report gains than their US counterparts. The overall scores are, in both cases, in the region of 30% but in the case of HKUST, for one of the items 63% report gains. None of the other Hong Kong universities report such high percentages.

Again the discipline bias of HKUST must be a major factor but it is still very interesting that more Hong Kong students overall report gains in this area than do the US students.

That said, only 30% of students report gains on these items, which is on the low side when set against some other variables.

Civic and Moral Development

Concerning Civic and Moral Development, there is only one item which can be used to compare Hong Kong students with those from the US. The reason for this is that two new items were introduced into the Hong Kong version, the USEQ, which did not exist in the CSEQ. In the case of the item 'Developing your own values and ethical standards' the percentage of US students reporting gains (61%) is substantially higher than the Hong Kong students (49% overall). No obvious reason for this difference is apparent. Among the Hong Kong universities the highest percentages are reported by CUHK (58%), HKU

(55%) and HKBU (50%) all three of which institutions are characterised by comparatively strong pastoral systems and, in the case of HKBU a commitment to the education of the whole person. Other than these points, the results from the individual Hong Kong universities are unremarkable. Taken as a whole though, some university leaders will be disappointed that only 27% of Hong Kong students report gains towards 'Understanding and being committed to civic duties as a citizen of Hong Kong'. Universities claim to be promoting this in quite a big way.

Language and Communication

In the 'Language and Communication' factor there is only one item – 'Writing clearly and effectively' – which has a US equivalent. The US score at 60% is considerably higher than the Hong Kong overall percentage of 42%. The individual university figures are remarkably consistent on this single item. The other two language items are 'English ability' and 'Chinese ability'. Overall the percentages reporting gains are 42% and 25% respectively. Among the universities the percentages in English ability are relatively similar except for HKBU and CUHK where they are lower than the others at 31% and 33%. At CUHK where teaching is not exclusively in English, this is understandable. At HKBU there would seem to be no obvious explanation for the difference. For 'Chinese ability' the only figure to stand out is the comparatively low (17%) score at HKU. The higher percentage score among US students on the item about writing clearly and effectively is understandable given that US students are in the main, studying in their first language. That will allow staff to improve students' academic writing skills e.g. structuring an argument, style and clarity of expression. For Hong Kong students, studying in a foreign language, their problems are much more fundamental, related to the

language itself and so less time can be spent on the higher level writing skills suggested above. It is difficult to know whether university leaders will be disappointed with the 42% figure reporting gains in English ability or not.

Considerable effort, both in terms of time and of resources, has been applied to the improvement of Hong Kong students' English at university. Additional courses in English Language have been introduced into the curriculum, some on a compulsory basis. Perhaps in mid-1996 when this data was collected, the full impact of the English language enhancement initiatives had not yet been felt. It would be interesting to gather the data again now in 1999 when the language enhancement policy initiatives are in full swing. If the policy is having the impact then it is anticipated that a higher percentage of students should be reporting gains in language. This would be an excellent example of how regular application of the USEQ would be very useful.

Personal and Social Development

Two of the three items, which have the highest loading in the factor 'Personal and social development' have a direct US equivalent. On both of the items 'Ability to function as a team member' and 'Understanding other people and the ability to get along with other people', the US percentages of students reporting gains are higher than those of the Hong Kong students (US 61% versus HK 49% and US 70% versus HK 52% respectively). The third item, without a US equivalent, is 'Ability to function as a leader'. Among the Hong Kong universities there seems to be little remarkable. On all three items, the traditional universities HKU and CUHK report quite high percentages overall, with HKUST comparatively low on all three but not remarkably so. The difference between Hong

Kong students and US students on the team membership question is hard to explain. It may be that pedagogical practices in respect of group or team assignments and projects differ between the two systems and that Hong Kong students do not get so many opportunities to work or study in this way. On the second question about understanding and getting along with other people, the explanation may lie in the homogeneity of Hong Kong students. Unlike the US where campuses are full of students of many different races, ethnicities and geographical origins, Hong Kong students are all racially and ethnically similar. They even all grew up in the same small city-state. It is therefore not surprising that fewer Hong Kong students report gains in this area than their US peers.

Vocational and Career Development

The final (seventh) factor to emerge from the Gains items is 'Vocational and career development'. In all three of the highest loading individual items, the US norms are higher than their Hong Kong equivalents (61%, 47% and 55% as opposed to 43%, 33% and 34%). There are few differences among the Hong Kong universities. HKUST scores highly on all three items. The only conclusion which can be suggested from this result is that the US students, in greater numbers, see the career relevance of their studies. This in itself is interesting since, there is anecdotal evidence that one of the primary motivations for participation in higher education among Hong Kong students is to enhance future career opportunities. That is certainly the view taken by some university staff in Hong Kong. The result from this study would suggest that it may be time to question that view. Alternatively, Hong Kong students may feel that it is possession of a degree (any degree) which is an essential for future career success.

Reading and Writing

Table 6.17
Textbooks or assigned course readings

	None	Fewer than 5	Between 5 and 10	Between 11 and 20	More than 20
CUHK	1%	29%	43%	17%	10%
CityU	2%	32%	41%	15%	10%
HKBU	2%	37%	38%	15%	8%
PolyU	3%	27%	40%	19%	11%
HKUST	1%	28%	46%	19%	6%
LC	2%	32%	43%	15%	8%
HKU	1%	23%	41%	21%	14%
Overall	2%	29%	42%	17%	10%
US	3%	32%	40%	20%	6%

n=5347

Reading and writing are surely considered to be some of the most basic, fundamental activities in the learning process. The questionnaire asks students to indicate how much reading and writing they do, and how much time they spend on their academic study activities. Overall, 42% of the Hong Kong student sample reported reading between five to ten textbooks and other assigned course readings in an academic year, 17% read about eleven to twenty, and 10% read more than twenty. However, there is also a large proportion, 31%, of the sample reporting to have read fewer than five textbooks or even none at all. The Hong Kong figures are actually very similar to the percentages reported by students at US universities with perhaps a slight suggestion that the US figures would be ranked alongside those Hong Kong universities at the lower end of the scale in terms of books read. Among the Hong Kong universities, more students at HKU seem to read more books than the other universities although the different percentages are not too marked. Is this what should have been expected? That is not an easy question to answer. It is difficult from this data to determine what would influence the number of books being read.

Table 6.18
Non-assigned readings

	None	Fewer than 5	Between 5 and 10	Between 11 and 20	More than 20
CUHK	15%	51%	20%	8%	6%
CityU	15%	47%	21%	10%	7%
HKBU	16%	44%	23%	11%	6%
PolyU	8%	42%	28%	12%	10%
HKUST	19%	54%	20%	5%	2%
LC	14%	41%	26%	11%	8%
HKU	11%	47%	23%	12%	7%
Overall	13%	47%	23%	10%	7%
US	22%	47%	18%	8%	6%

n=5288

Other than textbooks and assigned readings, during the academic year students are generally expected to be engaged in reading other non assigned books, articles and materials to supplement and enrich their own course learning. The Hong Kong sample indicates that 60% of students read none or fewer than five non-assigned course books a year. Twenty three percent read between five and ten, 10% between eleven and twenty, and 7% more than twenty. For ‘Non-Assigned readings’ a similar comparative pattern emerges. Again the US norms are broadly in line with the Hong Kong overall sample scores – perhaps again ranking towards the ‘bottom end’ of the scale of Hong Kong universities. Among the Hong Kong universities this time PolyU seem to have emerged as the university with the highest percentage of students reporting the higher number of non assigned books or articles being read. HKUST students report higher percentages reading fewer non-assigned readings than the other universities but again the differences are not marked.

Table 6.19
Essay type exam

	None	Fewer than 5	Between 5 and 10	Between 11 and 20	More than 20
CUHK	18%	50%	16%	9%	7%
CityU	32%	42%	14%	5%	7%
HKBU	21%	43%	19%	10%	7%
PolyU	23%	43%	17%	8%	9%
HKUST	28%	48%	12%	5%	7%
LC	16%	43%	23%	12%	6%
HKU	22%	43%	18%	8%	9%
Overall	23%	44%	17%	8%	8%
US	9%	36%	31%	19%	6%

n=5309

Students were also asked about their writing experiences both in terms of ‘Essay type examinations’ and in ‘Assignments or other written reports’ (term papers in the US vocabulary). As can be seen from the table, more US students report taking more essay type examinations in their courses than Hong Kong students. Only 9% report having no essay type exams as opposed to 23% of the Hong Kong group. At the other end of the scale 19% of the US students take between eleven and twenty essay type examinations whereas their Hong Kong counterparts, overall, report 8%. Among the Hong Kong universities there is little to note. One might have expected discipline to have played a part here in that science and technology students may be expected to produce fewer discursive type examination in answers. However HKUST students do not seem to be very different from their colleagues in sister institutions.

Table 6.20
Assignments or other written reports

	None	Fewer than 5	Between 5 and 10	Between 11 and 20	More than 20
CUHK	11%	53%	26%	7%	3%
CityU	9%	54%	27%	6%	4%
HKBU	4%	42%	39%	12%	3%
PolyU	11%	44%	31%	9%	5%
HKUST	14%	61%	16%	6%	3%
LC	6%	53%	32%	6%	3%
HKU	22%	40%	25%	9%	4%
Overall	12%	49%	27%	8%	4%
US	8%	42%	28%	17%	6%

n=5373

Finally in this particular section, students were asked about the number of ‘Assignments or written reports’ they had to do. As can be seen from the table the familiar ‘writing’ pattern emerges again. The US figures tend to show that more students report submitting more assignments than do the Hong Kong students (23% of the US students report having to complete more than eleven pieces of coursework in a year whereas the equivalent percentage for Hong Kong is only 12%). At the other end, 50% of US students report none or fewer than five pieces of work whereas the Hong Kong figure is 61%. Among the Hong Kong universities more HKUST students tend to report fewer assignments but at the upper end it is difficult to find any particular pattern emerging. With the HKUST students, the discipline bias may be affecting the result perhaps because ‘assignment’ or ‘written report’ is being interpreted in a certain way which may exclude some of the types of coursework expected of a science or technology student.

Perceptions of the University Environment

The USEQ asks students to rate their institution in terms of its emphasis on certain qualities such as 'intellectual qualities' and 'vocational competence'. The rating is on a seven point scale where seven would be a strong emphasis and one a weak emphasis. The mid point in the scale would therefore be four. Of the eight items three ('language ability', 'computing' and 'providing good teaching') were developed for the USEQ only. Therefore there are no equivalent US figures available. The results are set out in Table 2.13 in Appendix 2. The first and most noticeable observation that can be made is in the relative uniformity of the rankings and scores both within Hong Kong and between Hong Kong institutions and the US norm. Also, in general, the US students tend to rate their universities more positively in each of the dimensions than the Hong Kong overall totals but not greatly so.

For the Hong Kong universities there are a number of points to note. First for HKUST, the students rate their university very highly indeed on 'Development of academic, scholarly and intellectual qualities'; 'Developing skills in information technology and computing' and 'Providing good teaching'. As has been noted before, apart from being a positive endorsement of the university itself, this pattern would seem to be completely in step with that university's mission and culture – encouraging excellence, scholarship and the emphasis on information technology. Similar results across their first two ranking items can be seen for CUHK and HKU, the two traditional universities which take particular pride in their academic qualities and 'Being critical, evaluative and analytical'. In the same vein, PolyU which stresses its vocational relevance the students rate that

quality highest. Again LC would claim to emphasise in particular, critical and analytical skills as well as scholarship as would HKBU, and this is reflected in their students' perception of the institution.

There are, in addition, a number of other interesting results in this table. For example, the dimension 'Emphasis on providing good teaching' is given a low score by HKU students. Indeed it is the lowest score on that dimension by quite some way. This result should not be interpreted as HKU does not provide good teaching but that in the grand scheme of things, it is not emphasised. At HKUST the 'Development of artistic, expressive and creative qualities' is given a similarly low score when compared to the other scores and, in particular, the US norm. These again, may simply be reflections of mission and institutional ethos at the time that the data were collected.

As was noted in earlier chapters, Hong Kong higher education is discussed frequently and at some length in the media. The question must be asked therefore, whether these results related to the mission and culture of the organisations are merely self-fulfilling prophecies. In other words, do students view their institutions in a particular light simply because that is how they are portrayed in the media? Or, conversely, do the media see the universities in a particular way because that is how the students feel? Further research would be required before this question could be answered properly.

Conclusion

Chapter 6 has presented the mainly descriptive findings and results of the study. In essence it presented data to allow the question 'What is the student experience in Hong

Kong like (i.e. what are its qualities)?' to be answered. Some US data were also presented and where possible, comparisons were made between the various aspects of the student experience in each part of the world. Largely, the results were presented with commentary where felt to be appropriate although with such a rich sources of data more detailed analysis could have been presented. Where appropriate, possible explanations for differences were tentatively advanced. The meaning of these results are discussed more fully in Chapter 8 below.

Chapter 7: A More Detailed Analysis

Introduction

Chapter 7 deals with the most complex of the research questions. In earlier arguments, it was suggested that a major component of the quality of the teaching and learning dimension of a university's activities lay in the achievement of learning outcomes. It was then postulated that desirable learning outcomes are brought about, in part at least, by the student experience. University leaders then have a duty to search for quality by attempting to facilitate the optimum student experience in terms of bringing about learning outcomes. In order to do so effectively, the following question must be answered:

How does the student experience affect learning outcomes ?

Broadly speaking, it had always been intended that this most difficult question would require careful handling. From the data set the notion of student experiences can be operationalised in terms of the activity scale scores together with some other items which measure levels of effort and engagement. Thus, each of the items scores will, when taken together with the other items on that scale group, result in a measurement of the frequency or degree of engagement with that activity or experience.

The Independent Variables

So, to begin with there are eleven scores ($10 \leq x \leq 40$) representing the level of activity in each of the following dimensions of the student experience:

Library Experience (LE)

Experiences with Writing (EW)

Experiences with Lecturers (EL)

Student Acquaintances (SAS)

Clubs and Organisations (CO)

Course Learning (EC)

Athletics and Sports (AS)

Experiences with Computers (EC)

Experiences related to Personal Development (PE)

Campus Residence (CR)

General Scientific Knowledge (GS)

That list of eleven can be extended by including the two ‘Conversation Scales’, viz. ‘Information in Conversations’ (IC) and ‘Topics of Conversation’ (TC). The former measures how often learning related information is included in conversations and the latter, the breadth of subject matter.

Other variables which measure degrees of effort and levels of activities were also considered to be appropriate for inclusion. These included measures of time spent in studying and amount of reading and writing.

The coding for other variables simply reflects their ordering in the questionnaire so Q158 refers to question number 158. These variables are in the Reading/Writing section of the questionnaire on page 6.

During the current academic year how many course books have you read? Fill in one space in each column:

- *Text books or other assigned course books (Q158)*
- *Non-assigned course books (Q159)*
- *Other course readings (Q160)*

and

During the current academic year about how many written reports have you made? Fill in one space in each column:

- *Essay type examinations in your courses (Q161)*
- *Assignments or other written reports (Q162)*

In each case the response set is: none (coded 1); fewer than 5 (coded 2); between 5 and 10 (coded 3); between 11 and 20 (coded 4) and more than 20 (coded 5).

One other variable which was considered and accepted for inclusion in the model was Q15 ‘During the term time about how many hours a week do you usually spend on course related activities? This includes time spent in class and time spent studying’. The response set was: ‘about 50 hours a week or more (coded 5)’; ‘about 40 hours a week (coded 4)’; ‘about 30 hours a week (coded 3)’; ‘about 20 hours a week (coded 2) and less than 20 hours a week (coded 1)’.

Together with the Activity Scale scores and the Conversation Scale scores, these will represent the independent or explanatory variables. Taken together they are being viewed

as representing the student experience. It cannot be assumed, of course, that these represent all aspects of the student experience as some activities or experiences that are relevant may have been missed. The only reassurances on this point come from the Focus Group discussions where students by the end of the process, could not suggest any omissions from the instrument which they thought to be important in describing their time at university.

The hypothesis being examined is simply, that there will be a positive relationship between the student experience (measured by frequency and levels of engagement in various university experiences) and learning outcomes.

In order to test these associations, it will be necessary to find suitable dependent variable or variables representing learning outcomes. The obvious source is the 30 item section 'Estimates of Gains'. Pike (1995) has shown that self-reported gains are reliable. By themselves, the 30 items are not particularly helpful but if it could be found that these 30 items might form into recognisable relevant groups (latent variables) then the Estimates of Gains variables would be much more useful to the subsequent analysis. Consequently, as mentioned briefly in the previous chapter, the Estimates of Gains variables were subjected to a factor analysis to determine whether any latent variables (factors) existed and whether there were coherent and recognisable.

Factor Analysis of Estimates of Gains

The advantage of achieving a useful factor model of the Estimates of Gains variable will be that the analysis can proceed with a smaller number of dependent variables than, the

existing large number of individual items. Intuitively, one would expect the Estimates of Gains variables to have an underlying factor structure as the questionnaire items clearly follow a pattern. The factor analysis was carried out using SPSS.

The factor analysis resulted in a seven factor model. Appendix 5 sets out the seven factor model highlighting the three items with the highest factor loading. Some general observations can be made about the output. A number of individual items appear in more than one factor. This is not unsurprising since we know that certain kinds of knowledge are closely related.

The labelling of factors was carried out intuitively. Kuh et al (1997) identified a five factor model using the CSEQ (Third Edition) which includes 23 individual Estimates of Gains items. In the process to adapt the CSEQ, seven additional items were added and the wording in a number of others was altered. The five factors identified by Kuh et al (1997) are: 'General Education'; 'Personal / Social Development'; 'Vocational Preparation'; 'Science and Technology' and 'Intellectual Skills'. Interestingly the two factors which emerged from the USEQ data 'Language and Communication' and 'Civic and Moral Development' contain, among the items with the highest loadings, several of the new items added during the creation of the USEQ e.g. 'English ability'; 'Chinese ability' and 'Understanding and being committed to fulfil your civic duties as a citizen of Hong Kong'.

There are very many similarities between the models which emerged from the CSEQ data and the USEQ. Although the exercises were conducted quite independently of one another the factor structures and labelling processes were almost identical save for the

new items added to the USEQ. This provides strong evidence that the USEQ seven factor model is reliable.

‘Factors’ are often called ‘latent variables’. This terminology recognises them for what they are – variables obscured or hidden beneath the weight of all of the individual item variables. Factor analysis by itself produces results upon which certain statements about **reliability** can be made but this cannot be said of their **validity** in the same way. By scrutiny of the individual items themselves, one can, intuitively be fairly certain about the face validity of the factors identified. In this case, the items that go together to make up a factor are relatively homogeneous and the groupings were relatively easy to label. Some would argue that factor analysis is flawed for no other reason than it is not ‘falsifiable’. If we test the hypothesis that there is a pattern among a large number of variables, then the answer is always going to be ‘yes’. Some would argue that factor analysis therefore fails a fundamental philosophical test. For the purpose of this research, the attitude is going to be taken that factor analysis is a worthy and legitimate method of discovering factors – dimensions or latent variables. Further it is accepted that these factors can then be treated robustly in terms of further analysis.

The next stage of the analysis was to examine these factors in terms of a simple multiple regression model. The basic idea is to treat the seven factors as dependent variables in a regression model. The factors will represent learning outcomes and the independent or explanatory variables identified earlier will operationalise the student experience concept.

Before proceeding to discuss the results of the analysis, there are some issues about the nature of the variables in the model which must be discussed at this stage. In the previous

paragraphs, a number of limitations of the use of factor analysis were set out. These must be evaluated when drawing conclusions from the results that will be discussed later.

Similarly with multiple regression analysis, a number of conditions must be achieved before the technique can be justifiably applied. Multiple regression analysis employs the general linear model. Algebraically, this model is often expressed:

$$y = a + b\chi$$

where y represents the dependent variable and χ the independent variable. The values of 'a' and 'b' can be determined by regression analysis. Multiple regression merely extends that equation so that there are a number of different ' χ ' values in the equation, each representing a different explanatory variable. However, the variables used in a multiple regression model must be of a relatively high measurement scale i.e. ratio or interval scale, otherwise, the condition of the general linear model cannot be met.

The main group of independent variables to be used in the model will be the activity scales which are measured on a normalised scale with a maximum and minimum value of 40 and 10 respectively. So, in terms of meeting this data measurement criterion, there is no problem with the activity scales. Even the individual items which are coded on a numerical scale 1, 2, 3 and 4 representing the responses 'never', 'occasionally', 'often' and 'very often' are acceptable. Very strictly speaking, these might be viewed as nominal variables (i.e. low level). Most social scientists however would argue that these can be treated as if they are high level variables because they imply an interval. Similar assumptions may have to be made with other variables of a similar form.

There now follows a presentation of the results of the multiple regression analysis, taking as a first step each of the seven factors as dependent variables. The method in each case

was to use SPSS 'Multiple Regression' procedures. The independent variables were entered into the regression model using the procedure 'stepwise' which automatically selects the independent variables which best explain the variance among the dependent variables at a given tolerance level. The variables are selected in descending order of their contribution to the explanation of the variable. For the purposes of including variables in the equation the minimum tolerance level for inclusion was set at five percent. In other words, for each individual variable in the equation, the probability p that the variation happened by mere chance, as a result of T-test is to be less than 0.05. In statistical terms for Sig. T, $p < 0.05$. This means that the minimally acceptable probability that the association did not occur by chance is 95%. The full set of SPSS output tables for this procedure are felt to be unnecessary to reproduce since in most cases, the most significant listings of variables in the equation will be set out in a table in the text.

Factor 1: General Knowledge

Table 7.1
Factor 1: General knowledge

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Topics of conversation (TCSUMNOR)	0.64	0.04	0.20	0.00
2	Experiences in writing (EWSUMNOR)	0.33	0.04	0.27	0.00
3	Experiences with lecturers (ELSUMNOR)	0.23	0.04	0.30	0.00
4	Student Acquaintances (SASUMNOR)	0.18	0.04	0.32	0.00
5	Library Experiences (LESUMNOR)	0.17	0.04	0.33	0.00
6	Clubs and Organisations (COSUMNOR)	0.09	0.03	0.34	0.00
7	Time on course Related Activities (Q15)	-0.34	0.13	0.34	0.01
8	Information in Conversations (ICSUMNOR)	0.11	0.04	0.35	0.01
9	No. of Essay Type Exams (Q161)	0.41	0.17	0.35	0.02
10	Experience with Computers (ECSUMNOR)	-0.06	0.03	0.35	0.03

F = 48.44, Sig. F = 0.00

Table 7.1 sets out the final list of variables in the equation for the first regression analysis which specified Factor 1: General Knowledge as the dependent variable.

First of all, it is important to note that the general regression model in this case has produced a predictive set of variables which have a significant association with the dependent variable Factor 1: General Knowledge. The Adj. R² value at 0.35 is moderately high but means, on the negative side, that 65% of the variation of the reported gains are unexplained by this model. However, 35% of the variation is explained which can be seen as encouraging since there are a number of variables such as ‘ability’, ‘motivation’, and ‘attitude’ which are unavailable.

The scale score with the highest B value is ‘TCSUMNOR’ – ‘Topics of Conversation’. It would be extremely convenient to be able to claim that this scale can be a predictor of gains in general knowledge, but the converse is just as likely to be valid i.e. those students who are experiencing the greatest gains in general knowledge may be those who are engaging in the widest range of conversation topics. It cannot therefore be asserted that frequent engagement in a broad range of conversation topics **causes** gains to take place but it can be claimed that frequent engagement in a broad range of conversation topics is highly associated with gains in general knowledge.

More interestingly perhaps, the next variable in the equation is ‘EWSUMNOR’ – the normalised scale score for the scale ‘Experiences in Writing’. This variable contributes substantially to the variation in Factor 1: General Knowledge. Now, a closer examination of this scale reveals that this scale is **not** measuring quantity of writing activities. Instead it is dealing with ‘good practice’ in writing such as:

- *‘revision of drafts’*;
- *‘seeking advice from a lecturer’*;
- *‘spent at least five hours writing a paper’*;
- *‘used a dictionary and thought about grammar’*.

So the scale measures both ‘engagement’ with others about writing, both staff and fellow students (three items), with the other items mainly dealing with engagement with other resources (two items) and the remainder dealing with personal activity and effort. It is much more plausible to suggest that there is a causal relationship between the levels of effort and engagement suggested by this scale and gains in general knowledge. Of course, it can only be suggested that this is the casual direction, the statistics reveal no more than an association between these variables.

The third variable influencing the variation in estimates gains. Factor 1:

General Knowledge is 'ELSUMNOR', the normalised scale score for 'Experiences with Lecturers'. Once again this variable is highly significant ($P = 0.00$). The items which make up this scale are also highly interactive or engagement focused. Almost all of them deal with interaction with lecturing staff, e.g. 'talking with a lecturer', 'discussing ideas with a lecturer', 'visiting a lecturer after class', and 'asked a lecturer for information'.

The next variable entered into the regression model under the 'stepwise' protocol was 'SASUMNOR' – the normalised scale scores for the scale 'Student Acquaintances'. This ten item scale consists of questions about talking to, or having serious discussions with, other students or friends who are different from the respondent in terms of social background, political beliefs, religious beliefs and culture. Like the previous scales discussed, however, the focus is on the frequency of the interaction or engagement.

So, it would seem that there may be something of a pattern evolving here. A number of scales i.e. 'Topics of Conversation'; 'Experiences with Lecturers'; 'Student Acquaintances' all of which involve some degree of measurement of the frequency and subject of interaction, particularly conversational interaction between students and others have the most impact on the variation in the factor 'General Knowledge'. Even the scale 'Experiences with Writing' as has been seen, contains some items about interaction with lecturers or others about writing related issues. Certainly all of them represent engagement in some form or other. All of these variables are highly significant in the model in the statistical sense ($p < 0.01$ in all cases).

The next variable in the model is 'LESUMNOR'. This is the normalised scale score from the eleven item scale 'Library Experiences'. Most of the items do not relate to quantity of reading material (that particular dimension being dealt with by questions elsewhere in the questionnaire). Instead this scale concentrates on the frequency of engagement in Library based activities such as 'studying'; 'using the non-print section'; 'using CD-ROMs' and 'checking out books'. The level of statistical significance in respect of this scale score still remains high ($p = 0.00$). Although this scale does not involve engagement with others to the same extent as for the other scales discussed above, it is only to be expected that some form of frequency of engagement in Library activities is associated with increases in gains in General Knowledge.

The seventh variable entered in the regression model is Q15 which asks students to indicate how many hours a week they spend on course related activities. The scale is a five point scale descending from 'about 50 hours a week or more' down to 'less than 20 hours a week'. This variable enters the model at step seven and with a statistical significance of $p < 0.01$. However, the B value is -0.034.

The most interesting dimension of this variable's relationship with gains in General Knowledge is that the B value has a negative loading. In other words, more hours spent on course related activities is **negatively** associated with gains in general knowledge. If the nature of the variables discussed above are considered, which do have a positive association with gains in General Knowledge, perhaps this should not be so surprising. Most of the activities which these scales describe take place outside the formal class/studying time environment. Consequently, there is some logic in suggesting that the more hours spent in class-related activities, the less time that will be available for those

learning activities highlighted in the first few scales and which we know are positively associated with gains in General Knowledge.

At step eight in the regression model, the variable 'ICSUMNOR' is entered. This is the normalised scale score for the scale 'Information in Conversations'. This scale includes eight items which concentrate on the frequency of use of content and language medium in conversations with fellow students, e.g. 'used English at length', 'referred to something a lecturer said about a topic' and 'changed your opinion as a result of the knowledge or arguments presented by others'. For this variable $p < 0.01$, so it remains highly significant statistically. The inclusion of this variable in the regression model would seem to provide support or reconfirmation for some of the other variables discussed earlier. Once again, this scale deals with a level of interaction with others informally in conversation.

The model's next variable to be included in the equation is Q161, 'During the current academic year, about how many written reports have you made?' Specifically Q161 then refers to 'essay type exams in your courses'. The B value is 0.41 and is significant at the 5% level only ($p < 0.05$). So there is an association between the number of written reports (especially essay type exams) and gains in General Knowledge. This may indicate some differences among disciplines or groups of disciplines but that issue will be examined properly at a later stage.

Finally, at the tenth step, the model enters the variable 'ECSUMNOR' representing the normalised scores on the scale 'Experiences with Computers'. This variable is also interesting, like Q15, because of the polarity of the association. Although the T-test

indicates that it is significant only at the 5% level ($p < 0.05$), the value of B is -0.06, once again showing that there is a negative association between frequency of experiences with computers and gains in General Knowledge. This is a ten item scale which, as was pointed out above, was not included in the original US version of the CSEQ. Instead, it was developed and tested in Hong Kong for inclusion in the local version, the USEQ.

The items in the 'Experiences with Computers' scale are mainly centred on frequency of engagement with computers e.g. 'used a computer on campus'; 'used a computer at home' and 'used the internet'. As in the case of Q15, hours spent on course learning, the amount of time spent using computers can be seen as an 'opportunity cost' of time not being spent engaging with others which types of activities, as those sub-scale scores with positive B values suggest, are associated with gains in General Knowledge.

Overall, the regression model includes ten independent variables which, collectively, account for approximately 36% of the variation in the dependent variable Factor 1: General Knowledge. Of these ten predictive variables, eight, which are composed, mainly, of items representing engagement with others, have a positive association with the dependent variable. As for the remaining two variables 'Time Spent on Course Related Activities' and 'Experience with Computers' which had a negative loading were **much** less involved with interpersonal engagement but could even be seen as reducing opportunities for such activities. There does seem to be some logic (albeit perverse) that this should be the case but the idea that there is a negative association between hours spent on course-related activities and increases in general knowledge will be of concern to university managers.

Factor 2: Cognitive and Intellectual Development

Table 7.2
Factor 2: Cognitive and intellectual development

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Topics of Conversation (TCSUMNOR)	0.51	0.04	0.20	0.00
2	Course Learning (CLSUMNOR)	0.27	0.04	0.26	0.00
3	Experiences with Computers (ECSUMNOR)	0.14	0.04	0.30	0.00
4	Information in Conversations (ICSUMNOR)	0.19	0.04	0.32	0.00
5	Number of Assignments or Other Written Reports	0.42	0.10	0.33	0.00

F = 85.08, Sig. F = 0.00

This factor deals with learning about learning. The regression model which resulted from using Factor 2 as the dependent variable, consisted of a five step variable entry model before the limiting significance value of T (set at 0.05) was reached. In this case all of the B values included in the model were positive. In total, the final model explained 33% of the variation in Factor 2 Cognitive and Intellectual Development ($R^2 = 0.33$) which showed a high level of statistical significance (Sig. F = 0.00).

Taking each independent variable in the regression model in turn, at step one, 'TCSUMNOR' (Topics of Conversation) was entered. The B value was 0.51 and for the significance of T, $p = 0.00$. Interestingly this was the first variable to be entered in the regression model for Factor 1 also. However, whereas with General Knowledge it would be understandable, prima facie, for students reporting gains to participate in a wide range of conversation topics this is not so self-evident in respect of Cognitive and Intellectual Development. But this will be considered in more depth later.

At step two, 'CLSUMNOR' was entered ($B = 0.27$, Sig. T, $p = 0.00$). This variable, being the normalised sub-scale score for course learning experiences, consists of items broadly related to learning activities, e.g. 'took detailed notes in class'; 'thought about practical applications of the material' and 'made outlines from class notes or readings'. Intuitively, it makes considerable sense that this variable should be positively associated with Intellectual and Cognitive Development since many of these activities are about learning how to learn. What will be more interesting to consider, are the policy implications of that association i.e. how should the promotion of those activities related to course learning be effected in order to achieve the goal of achieving more gains in cognitive and intellectual development?

'ECSUMNOR' (Experiences with Computers) was the variable entered on step 3, $B = 0.14$, Sig T, $p = 0.00$. This variable which had a negative loading when Factor 1 was the dependent variable, in this case has a positive loading. The contribution to the overall variation is highly significant statistically. Once again, it is interesting to note that the ECSUMNOR variable is about **type** and **frequency** of use of computers. However, it seems that there is a positive association between frequency of use with computers for a broad range of purposes and cognitive and intellectual development. Frequency of use of computers might also be seen as a way in which students are learning how to learn. Already, it would seem to be emerging that Experience with Computers is an important variable having a negative association with gains in General Knowledge but a positive effect on Factor 2 Cognitive and Intellectual Development.

At the fourth step in this particular regression model 'ICSUMNOR' (Information in Conversations) was entered. Again this variable highly statistically significant $p = 0.00$,

and the B value was 0.19. Just as for Factor 1, General Knowledge, both variables which are concerned with conversational engagement are positively associated with gains also in Factor 2: Cognitive and Intellectual Development. As was mentioned above, it is far from clear, especially with these two variables, that there is any causality in the association and, if there is, that it necessarily flows from independent to dependent variables. It is quite plausible that any causal relationship flows in the other direction. This question will be discussed in more detail in the context of the overall results pattern.

The final variable in the regression model is Q162, 'During the current academic year how many [assignments or written reports] have you made?'. With a B value of 0.42 this variable is highly significant (Sig T, $p = 0.00$). Overall, it can now be seen that there are five variables which have a statistically significant association with Factor 2: Gains in Cognitive and Intellectual Development. All the relationships are positive. Taken together they account for 33% of the variability of the dependent variable.

Factor 3: Personal and Social Development

Table 7.3:
Factor 3: Personal/social development

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Information in Conversations (ICSUMNOR)	0.35	0.03	0.15	0.00
2	Clubs and Organisations (COSUMNOR)	0.14	0.02	0.21	0.00
3	Course Learning (CLSUMNOR)	0.17	0.03	0.24	0.00
4	Campus Residence (CRSUMNOR)	0.12	0.02	0.26	0.00
5	Topics of Conversation (TCSUMNOR)	0.13	0.04	0.27	0.00
6	No. of Essay Type Examinations (Q161)	0.37	0.13	0.28	0.00
7	Experiences with Lecturers (ELSUMNOR)	0.07	0.03	0.28	0.02
8	General Scientific Knowledge (GSSUMNOR)	-0.05	0.86	0.28	0.01

Next to be considered is Factor 3: Personal and Social Development. Overall, the regression model produced a series of independent variables which were able to account for 28% of the variation in the dependent variable Personal and Social Development. The final regression model produces eight predictive variables.

Once again, 'ICSUMNOR' is the first variable to be entered under the stepwise protocol. It is highly significant, $p = 0.00$ and the B value is 0.35. The closely related variable 'TCSUMNOR' was entered at step five. It is also highly significant ($p = 0.00$), with a B value of 0.13. The 'conversation' variables have appeared once again as major predictors of, this time, gains in Personal and Social Development. With Factors 1 and 2, there is a minor overlap of items included in each of the factors; two out of a possible eighteen items are common to both. In the case of Factor 3, there is also a small overlap – one item (Gains in Presentation and Communication Skills) is common to both Factors 2 and 3. However, there is enough dissimilarity of items included to rule out the connection

that the 'conversation' variables are showing up in all of these three regression models simply because they share some common items. At least as far as the first three factors to be considered are concerned, the 'conversation' variables seem to be playing an important part.

At the second step, 'COSUMNOR' (Clubs and Organisations) is entered with a B value of 0.14 for which the T is significant ($p = 0.00$). This is the first time that this variable has played an active role in the prediction of any of the factors. Clearly, the items in this scale relate to social activities e.g. 'attended a club, organisation, or student union meeting'; 'discussed policies and issues relating to campus activities and student union' and 'worked on a committee'. All of these seem to confirm the importance of social interaction (as one would expect) on this dependent variable.

Interestingly, a variable which includes fewer discursive or interactive elements 'CLSUMNOR' (Course Learning) is entered at step 3. The B value is 0.17 (sig T, $p = 0.00$). This scale emphasises studying and learning activities such as 'took notes in class' and 'tried to see how different facts and ideas fit together'. It is less obvious why this variable plays a role in influencing students' Personal/Social Development.

At the next step, the model returns to the earlier theme by entering 'CRSUMNOR' (Campus Residence Experiences). The B value is 0.12 (Sig. T, $p = 0.00$). This scale includes items which strongly relate to social interaction - 'had lively conversations about various topics during dinner in the dining hall, snack bar, or cafeteria'; 'participated in discussions that lasted late into the night' and 'attended social events organised by the student hostel'. Its appearance in this model is hardly surprising but it should be recalled

that there are two problems with this variable. First, during the formative stages of the questionnaire design at the focus group discussions, it was recognised that translating the original CSEQ scale into a series of items relevant to the Hong Kong student life was not easy and the student respondents were less clear cut about applicability (See **Chapter 5 above**). Also, the Campus Residence experience is not available equally to all students as three of the seven universities do not have student residences. This point will be considered again later.

Finally the model enters the last significant variable 'GSSUMNOR' (General Scientific Knowledge) ($B = -0.05$; Sig. T, $p = 0.01$). The level of significance is slightly lower than the prior variables but the negative loading is interesting in that it is suggesting that frequent engagement in activities related to General Scientific Knowledge have a negative association with Personal/Social Development. This is an interesting development and, whilst one would not wish to make too much of it given that it is the eighth variable entered, it does suggest that there may be a 'discipline' effect here. In other words, those students in the disciplines which particularly involve students in activities which are related to the acquisition of General Scientific Knowledge report negative gain in Social/Personal Development.

Overall, the predictive model seems to make some sense in terms of face validity, since most of the predictive variables are related to social interaction and thus in keeping with the nature of the dependent variable Social/Personal Development. Nonetheless, the exceptions are interesting in themselves.

Factor 4: General Scientific Knowledge

Table 7.4
Factor 4: General scientific knowledge

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	General Scientific Knowledge (GSSUMNOR)	0.39	0.02	0.42	0.00
2	Topics of Conversation (TCSUMNOR)	0.37	0.02	0.43	0.00
3	Personal Experiences (PESUMNOR)	-0.09	0.02	0.44	0.00
4	Athletics and Sports (ASSUMNOR)	0.06	0.02	0.45	0.00
5	Experiences with Writing (EWSUMNOR)	-0.07	0.02	0.46	0.00
6	No. of Hours on Course Related Activities (Q15)	0.26	0.08	0.47	0.00
7	Clubs and Organisations (COSUMNOR)	-0.03	0.02	0.47	0.03
8	No. of Non-assigned Course Books (read) (Q159)	-0.18	0.08	0.47	0.03
9	Course Learning (CLSUMNOR)	0.05	0.02	0.47	0.02

The regression model with Factor 4 General Scientific Knowledge as the dependent variable produces a solution with a high Adj. R^2 at 0.42 (Sig F = 0.00). Nine predictive variables satisfy the criteria for being loaded into the model. Unsurprisingly, the first variable to be entered into the equation was GSSUMNOR, General Scientific Knowledge (B = 0.39, Sig T, P = 0.00). The variable by itself explains 42% of the variance. At step two, TCSUMNOR (Topics of Conversation) was entered. (B = 0.37, Sig. T, P = 0.00).

At Step 3, PESUMNOR, 'Personal Experiences' is entered (B = -0.09, Sig. T, P = 0.00). Notice that the B value is negative, showing that the score on the Personal Experiences scale is negatively associated with gains in General Scientific Knowledge. Next, the Athletics and Sports scale was loaded into the equation (B = 0.06, Sig. T, P = 0.00) and is followed at the next step by Experiences in Writing, EWSUMNOR (B = -0.07, Sig. T, P = 0.00). Once again, since the B value is negative, it can be deduced that, there is an

inverse relationship between 'experiences in writing' and gains in scientific knowledge.

Q15 'No. of hours spent on course related activities' is the next variable to meet the minimum criteria to be entered into the equation ($B = 0.26$, Sig. T, $P = 0.00$), followed by Clubs and Organisation ($B = -0.03$, Sig. T, $P = 0.03$). In the case of the latter, the B value is once again negative allowing it to be inferred that the relationship between experiences with Clubs and Organisations and gains in scientific knowledge is inverse.

Finally Q159 'Number of non-assigned course books read' is entered into the equation.

The first and most noticeable fact that can be seen in the consideration of the model resulting from Factor 4 'General Scientific Knowledge' is that the variable with the same name 'General Scientific Knowledge' accounts for all but 0.05 of the Adj. R square value. The other variables combined, only account for that remaining 0.05. Obviously, a high degree of engagement in the items which make up the General Scientific Knowledge scale should lead, one would surmise, to high levels of reported gains in the General Scientific Knowledge area. As can be seen from the results of this survey, this has indeed happened.

Factor 5: Moral and Ethical Development

Table 7.5
Factor 5: Moral and ethical development

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Topics of Conversation (TCSUMNOR)	0.57	0.04	0.22	0.00
2	Course Learning (CLSUMNOR)	0.25	0.03	0.27	0.00
3	Information in Conversations (ICSUMNOR)	0.20	0.04	0.29	0.00
4	Student Acquaintances (SASUMNOR)	0.13	0.03	0.30	0.00
5	No. of Essay Type Examinations (Q161)	0.42	0.15	0.31	0.01
6	Clubs and Organisations (COSUMNOR)	0.04	0.02	0.31	0.01

For Factor 5, 'Moral and Ethical Development', the resulting model explains 31% of the variance ($\text{Adj. } R^2 = 0.31$). At step number one, SPSS enters 'Topics of Conversation' as the first variable in the regression equation ($\text{Adj. } R^2 = 0.22$, Sig. T, P = 0.00). As has been pointed out before the Topics of Conversation scale measures frequency of conversation activities and also particular topics used in conversation. In relation to Moral and Ethical Development, it is certainly the case that several of the individual items on that particular scale related to moral or ethical issues e.g. 'religion', 'social and ethical issues related to science and technology' and to 'major social problems such as peace, human rights, equality, and justice'.

At step two, SPSS enters 'CLSUMNOR' (Course Learning) ($\text{Adj. } R^2 = 0.27$, Sig. T, P = 0.00). Interestingly, this variable also featured in the model related to Personal/Social Development. As with the case of Moral and Ethical Development, it is not immediately

obvious why this variable should exert such an influence on Moral and Ethical Development.

The next variable to be entered is 'ICSUMNOR' (Information in Conversations) variable. Again, like 'TCSUMNOR' (Topics of Conversation) this variable measures, to some degree, the quantity of conversational engagement between students as well as the frequency. Certainly some of the items that go to make up both the 'Information in Conversation' and 'Topics of Conversation' scales relate to moral and ethical issues such as 'Major social problems such as peace, human rights, equality, justice' and 'Social and ethical issues related to science and technology such as energy, pollution chemicals, genetics, military use'. It is therefore unsurprising that this relationship exists.

At Step 4, the model enters 'SASUMNOR' (Student Acquaintances) ($\text{Adj. } R^2 = 0.30$, Sig. T, P = 0.00). Again, this is a variable measuring frequency, quality and depth of interaction with fellow students. The emphasis in this scale is with 'serious discussions' and lists quite a number of topics such as religious beliefs, political opinions and personal values.

At the next step, Q161 meets the model's criteria for entry and so appears in the equation ($\text{Adj. } R^2 = 0.31$, Sig. T, P = 0.01). Q161 is the variable asking students about the number of essay type examinations in their course. As has been noted before, this variable is similar in type to Course Learning. On the face of it there is little obvious to explain why this would be related in particular to gains in Moral and Ethical Development but since it appears as a significant dependent variable in other equations, then clearly it has to be thought of as a reasonably good all round predictor of many gains.

Finally at the final (sixth) step the model enters 'COSUMNOR' (Clubs and Organisations) variable ($R^2 = 0.31$, Sig. T, $P = 0.01$). The Clubs and Organisations scale confirms the importance of 'social interaction' type of variables which seem to have predominated in the model predicting gains in Moral and Ethical Development. With a total R^2 of 0.31, the model for this dependent variable is reasonably robust when compared to some of the others. The last few variables cause little R^2 change and therefore do not add very much to the predictive capabilities of the model.

Factor 6: Vocational and Career Development

Table 7.6
Factor 6: Vocational and career development

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Information in Conversations (ICSUMNOR)	0.21	0.02	0.15	0.00
2	Time Spent on Course Related Activities (Q15)	0.36	0.06	0.18	0.00
3	Experiences with Lecturers (ELSUMNOR)	0.07	0.01	0.20	0.00
4	General Scientific Knowledge (GSSUMNOR)	0.05	0.01	0.21	0.00
5	Course Learning (CLSUMNOR)	0.06	0.02	0.22	0.00

For the dependent variable Factor 6, Vocational and Career Development the final model produces a total R^2 of 0.22. This is not one of the best predictive models since over 75% of the variance is unexplained by the explanatory variables in the equation. At Step 1, SPSS enters 'ICSUMNOR' (Information in Conversations) scale ($R^2 = 0.15$, Sig. T, P = 0.00). Apart from fact that this variable appears in the models quite often, there is no obvious reason why the Information in Conversations scale would produce such a strong association with Vocational and Career Development. None of the items which make up the scale would seem to be connected with such a dimension whatsoever.

The second variable entered by the model is Q15 — which asks students how much time they spend on course related activities, ($R^2 = 0.18$, Sig. T, P = 0.00). It is interesting to note a statistically significant association between higher numbers of course related hours and reported gains in the area of Career and Vocational Development. It may be the case that those courses and programmes which are of a more specific professional or career orientation such as accountancy, physiotherapy or civil engineering have more course related requirements. These could be class contact hours or items such as reading or assessment. Anecdotally, it is reported by many members of staff that in courses which

may require to meet the conditions of a professional body, the curriculum is much too full. Indeed in Hong Kong the Universities are lobbying strongly to allow the current standard three year full-time undergraduate bachelor's degree to be lengthened to four years. This is to allow new and more topics to be taught (especially languages and general education) in addition to what is seen as an already grossly overcrowded curriculum. There is no firm evidence as such to support the assertion about professional or vocational courses having more course related time attached to them but the results of this survey certainly do nothing to contradict this notion.

'Experiences with Lecturers' (ELSUMNOR) is entered by SPSS at the third step ($R^2 = 0.20$, Sig. T, $P = 0.00$). Once again, it is not at all obvious why the items in this scale should relate so strongly to gains in vocational and career development (save for the single obvious item 'Discussed your career plans and ambitions with a lecturer'. The next variable to be entered into the model is 'GSSUMNOR' (General Scientific Knowledge) ($R^2 = 0.21$, Sig. T, $P = 0.00$) and then, finally, at step five, 'CLSUMNOR' (Course Learning) is entered into the model ($R^2 = 0.22$, Sig. T, $P = 0.00$), although the added value is very slight indeed. When viewed overall, there is just a suggestion that there may be some discipline effect at work here. The inclusion of Q15, involving time spent on course related activities, suggests that those students involved in professional courses and or science, engineering and technology course which have traditionally been viewed as having comparatively high course related hours, are reporting higher gains in career and vocational development. The inclusion of General Scientific Knowledge as one of the statistically significant variables in the equation would seem to provide additional evidence that there is indeed a discipline effect taking place. It is generally held that the science, engineering and technology based disciplines have a stronger professional

orientation, which may lead to students of those disciplines reporting greater gains in the career and vocational development factor.

Nevertheless, the Information in Conversations variable still contributes a considerable proportion of the overall explanation of the variance ($R^2 = 0.15$ for ICSUMNOR, $R^2 = 0.22$ for the total model). Once again the 'conversation' variables seem to be having a major influence on students' reported gains. Perhaps somewhat surprisingly, that observation seems to hold in the case of Vocational and Career development as well.

Further analysis will be needed to determine whether or not there is some discipline effect at work, causing the variable Q15 number of hours engaged in course activities, and General Scientific Knowledge to feature so prominently in the explanatory model for the Career and Vocational Development factor.

Factor 7: Language and Communication Skills

Table 7.7
Factor 7: Language and communication skills

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Information in Conversations (ICSUMNOR)	0.23	0.02	0.14	0.00
2	Experiences with Writing (EWSUMNOR)	0.15	0.02	0.20	0.00
3	No. of Essay Type Examinations (Q161)	0.45	0.09	0.22	0.00
4	Course Learning (CLSUMNOR)	0.10	0.02	0.24	0.00
5	Experiences with Lecturers (ELSUMNOR)	0.07	0.02	0.25	0.00
6	Topics of Conversations (TCSUMNOR)	0.06	0.02	0.26	0.00
7	Clubs and Organisations (COSUMNOR)	-0.03	0.01	0.26	0.00
8	Student Acquaintances (SASUMNOR)	0.04	0.02	0.26	0.00

F = 143.13, Sig. F = 0.00

The initial variable entered into the equation for Factor 7 ‘Language and Communication Skills’ is ‘ICSUMNOR’ (Information in Conversations) which is, as has been reported on several occasions, a measure of how often students engage in conversations. In addition, two of the items in this scale relate to use of second or foreign languages (English and Putonghua). In this case the $R^2 = 0.14$, Sig. T, P = 0.00. For the next variable, EWSUMNOR ($R^2 = 0.20$, Sig. T, P = 0.00) ‘Experiences in Writing’ the R^2 difference between the two indicates that it is making a major impact on the overall predictive value of the model. Both variables, of course, relate to two of the four dimensions of language — speaking and writing. It is not surprising therefore that these scales have an important part to play in the predictability for Factor 7, Language and Communication Skills.

These two variables are followed by Q161 — ‘About how many written (essay type exams) have you made?’ Again this variable measures quantity of writing activities that students have undertaken ($R^2 = 0.22$, Sig. T, $P = 0.00$). This relates once more directly to language and communication skills. At Step 4, the variable CLSUMNOR ‘Course Learning’ is entered into the model ($R^2 = 0.24$, Sig. T, $P = 0.00$). This scale includes some speaking and writing items e.g. ‘participation in discussion,’ ‘taking notes in English,’ and ‘did additional readings’. This further reinforces the importance of language practice, particularly writing and speaking to gains in language and communication skills.

At Step five ‘ELSUMNOR’ (Experiences with Lecturers) ($R^2 = 0.25$, $P = 0.00$) is entered into the model. This scale includes several ‘discussions’ items, e.g. ‘Discussed ideas for an assignment or other class project with a lecturer’; ‘Discussed personal problems with a lecturer’ and ‘Discussed your career plans and ambitions with a lecturer’. As such, it is another ‘social interaction’ variable and thus in keeping with the other variables in the model.

Next ‘TCSUMNOR’ (Topics of Conversation) ($R^2 = 0.26$, $P = 0.00$) is entered into the model. This variable, as has been said many times, also measures frequency of conversational engagement and is therefore related to communication. The final two variables are ‘COSUMNOR’ (Clubs and Organisations) ($R^2 = 0.26$, $P = 0.00$) and ‘SASUMNOR’ (Student Acquaintances) ($R^2 = 0.26$, $P = 0.00$) both of which relate directly to social interaction.

Taken together the explanatory model accounts for 26% of the variation in the dependent variable Language and Communication Skills. The last four variables collectively contribute only 0.01 to the R^2 change which is very little. The variables which seem to play the most important role in this explanatory model are all directly related to language and communication skills, particularly the writing and speaking dimensions of language.

Total Gains

Table 7.8:
Total gains

Step No.	Variable	B	SE B	Adj. R sq	For Sig T, P=
1	Topics of Conversation (TCSUMNOR)	1.74	0.07	0.23	0.00
2	Course Learning (CLSUMNOR)	0.80	0.06	0.30	0.00
3	General Scientific Knowledge (GSSUMNOR)	0.37	0.05	0.32	0.00
4	Information in Conversations (ICSUMNOR)	0.52	0.08	0.33	0.00
5	Clubs and Organisations (COSUMNOR)	0.21	0.04	0.34	0.00
6	Experiences with Lecturers (ELSUMNOR)	0.24	0.06	0.34	0.00
7	No. of Essay Type Examinations (Q161)	1.00	0.30	0.35	0.00
8	Student Acquaintances (SASUMNOR)	0.21	0.07	0.35	0.00
9	No. of Other Course Readings (Q160)	0.63	0.23	0.35	0.00

In one sense that completes the multivariate analysis of data. Models for each of the seven factors have been computed. The models had varying degrees of success in predicting the variance in the dependent variables, ranging from 22% for Moral and Ethical Development to 42% for General Scientific Knowledge.

There may be some merit in examining the effect of the explanatory variables on **all** gains as opposed to simply the individual factors. Although something of a blunter and cruder instrument, it was felt to be worthwhile in order to see if any more interesting relationships emerge which will illuminate further, the association between the student experience and learning outcomes. Accordingly, a further regression model was computed using the sum of the Estimates of Gains items as the dependent variable. The new variable was labelled 'Total Gains'.

The model with Total Gains as the dependent variable produces a nine-item solution predicting a relatively high R^2 value of 35%. As one would expect, the solution for the

Total Gains model reflects the prominence of the explanatory variables in the individual factor models. Topics of Conversation predicts 23% of the variance by itself (Adj. $R^2 = 0.23$, $B = 1.74$) and Course Learning a further 7% (Adj. $R^2 = 0.30$, $B = 0.80$). General Scientific Knowledge is entered third and it adds a further 2% (Adj. $R^2 = 0.32$, $B = 0.37$). Although General Scientific Knowledge did not appear in many of the individual Factor models it should be recalled that it contributed 42% of the variance in Factor 4 General Scientific Knowledge. That proportion alone probably accounts for its early inclusion in the Total Gains model. In some ways that demonstrates why the Total Gains model is somewhat crude in that it can obscure some finer details about the relationships between the independent and dependent variables in such a model.

The remaining variables in the model confirm some of the patterns seen earlier in the individual factor models. Several 'social interaction' type variables appear viz. Information in Conversations; Clubs and Organisations; Experiences with Lecturers; Student Acquaintances. Two coursework related variables also appear to complement Course Learning — 'No. of Essay Type Examinations' and 'No. of Other Course Readings'. Interestingly the latter did not emerge in any of the individual factor models.

This final regression model merely serves to confirm some of the earlier results. The 'conversation' variables are important in predicting learning outcomes as are certain variables concerned more directly with classroom learning.

Other Considerations

During the analysis phase it was suggested that some of the outcomes of the factor analysis might have been influenced by a discipline effect. For example in the analysis of Factor 1, General Knowledge, a negative association was found between the number of hours spent on course related activities and gain in General Knowledge. Consequently, in order to test whether this was the case, a new variable was created by allocating each student to either the 'science' or 'non science' group according to their course of study (Q8: 'Which of the following comes closest to describing your major course of study?'). Each of the fourteen discipline areas was assigned either to the 'science' or 'non science' group. The following were grouped in 'science'; 'biological sciences'; 'built environment'; 'clinical medicine/dentistry'; 'engineering'; 'IT and computing science'; 'mathematics'; 'physics/chemistry' and 'subjects and professions allied to medicine and dentistry'. Although one or two of these allocations were questionable, the majority were relatively straightforward.

This new dichotomous variable was loaded into each of the regression models. The new variable did not emerge as significant in any of the models not even in Factor 4: General Scientific Knowledge. At first sight, this seems to be surprising but it is likely that this variable is highly correlated with the General Scientific Knowledge scale, which will be remembered, explains 42% of the variance in the dependent variable. This result does not prove that there is no discipline effect. It can be asserted that the science:non-science dichotomy does not produce any effect that is statistically significant. Further, since the existence of a discipline effect is not believed to be a crucial threat to the central thesis, this analysis is believed to be sufficient. To undertake a more thorough analysis

(investigating, say the fourteen discipline sub-populations) is thus not considered to be a trade off decision of sufficient value.

Intuitively, one might also suspect that there might be differences arising because of gender. For example women students' student experiences may be different from that of men. Again whilst this may be of interest in itself, it would only be of interest to this study if gender has an effect on the student experiences and their relationship with learning outcomes. In order to test this, gender (another dichotomous variable, and thus allowable in regression analysis) was entered into each of the models. In none of the analysis did gender emerge as a statistically significant variable. Once again this does not present any evidence to suggest that it would be profitable to engage in an analysis of the sub populations and so none was carried out.

Conclusion

In this chapter the results of the detailed analysis to address the research question:

How does the student experience affect learning outcomes?

have been considered.

In order to attempt to answer this question, the Estimates of Gains variables were subjected to factor analysis. A seven-factor model emerged each of which were then regressed with the activity scales and several other variables believed to be influential in affecting learning outcomes. Each of these models is presented. The chapter goes on to

describe the regression model with Total Gains as the dependent variable. Preliminary scrutiny of the results shows that certain activities involving social interaction and structured course learning are associated with learning outcomes. The chapter ends with a description of certain other analyses which were carried out to assess the effect of subject discipline and gender. The next chapter is devoted to a full discussion of the descriptive results presented previously and these described in this chapter.

Chapter 8: Discussion of Results

Introduction

In this chapter the overall results of the survey are considered. In particular, attention is paid to the substantive as opposed to the statistical significance of the various outcomes from the procedures used. The chapter begins with a consideration of possible threats to the conceptual validity of the study in the form of a case which might be made by a critic. Consideration is also given to the results and their place in the overall thesis. The original argument began with the concept of quality in a university. An attempt will be made in this chapter to relate the results which have been found to this conceptual framework. Throughout the chapter the results are related, where possible, to findings of other researchers published in the various literatures. Finally, an attempt is made to reflect on the value of the study in terms of meeting the various objectives which were set out earlier, particularly the research questions.

Potential Threats to Validity

The validity of the questionnaire and the other detailed aspects of the research design was considered along the lines of the model proposed by Jaeger (1984). Validity is considered to be the extent to which a research device really measures what is being intended. The notion of validity can be subdivided into many sub-categories including content validity, external validity, construct validity and discriminant validity. Some of these categories can be further sub-divided. For example, external validity can refer to both the extent to which the results can be generalised beyond the immediate sample (population validity) and the way in which it can be generalised beyond the actual setting

of the fieldwork (ecological validity). Validity is, then, a multidimensional concept.

Jaeger's model posits certain questions which the researcher must deal with, in order to be assured of the validity of the research. Examples of these questions are:

- *were the questions content valid ?*
- *was there evidence that respondents:*
 - * *understood the question ?*
 - * *interpreted the questions as intended?*
 - * *were willing to respond?*
 - * *had the knowledge or information needed to respond?*
 - * *were honest in their responses?*
 - * *recorded responses accurately?*

and that responses were:

- * *interpreted accurately?*

(Jaeger, 1984)

Finally, in addition to those criteria for the study as a whole, is there evidence that the findings can be generalised beyond the sample and the setting ?

In the case of this study, considerable efforts were made to ensure that these issues regarding the instrument itself were fully addressed through the adaptation process. The careful checking and rechecking of interpretation, wording and meaning of items and scales was the main reason for conducting the adaptation process in the first place. As was described above, the pre-survey ethnographic research was designed around this validity model. By the end of the fourth focus group session and individual interviews there was clear evidence from the respondents that:

- they fully understood the meaning of the questions and they shared a common understanding;

- their interpretation of the questions was clear, correct and unambiguous;
- the survey population respondents would be willing to participate in and respond to this study;
- by the time the final version had been developed, students would have all of the necessary knowledge and experience to respond intelligently;

In terms of content and construct validity, the focus group meetings followed by the interviews deal with these issues also. In terms of content validity, the adequacy with which the instrument samples the domain that it is meant to, was discussed and attested to by the focus group participants. In terms of construct validity the key questions are whether the indicators chosen, operationalise the key concepts or constructs the student experience and learning outcomes. The focus group discussion can do little to assist with this question. However there are other researchers principally Pike (1995) and Pace (1984, 1990) who have attested to the validity and reliability of those indicators.

In addition to the above questions about validity, other issues can be raised about the validity of the analysis and the conclusions being drawn.

Validity of the Analysis

At simplistic face value, it can be argued that this study has determined various activities or 'university experiences' which, when taken together, seem to explain approximately 35% of students' learning outcomes. Seldom are research conclusions quite so straight forward as will be discussed in detail in the following paragraphs. Nonetheless, assuming that this over simplistic conclusion is actually true for the moment, how can its worth be evaluated? On the one hand, it might be argued that 35% is not very a

substantial result since, by implication, in the world presented, 65% of the variation is unexplained. The explanatory models say nothing about, say, the inherent ability of the individual students, nor the learning strategies employed by the students. In the case of the former, pre university examination results remain in, Hong Kong, (and in many other higher education systems throughout the world) the main or at least most important factor in determining whether an applicant actually secures a place in higher education. Moreover, in Hong Kong with its highly school examination results oriented system they determine which programme a student is admitted into, and, indeed which university. One would assume therefore, that university managers place great emphasis on the ability of examination results to determine a student's likely future performance in higher education. It can further be asserted that school examination performance is thus being taken as an indicator of inherent ability.

Since the model does not take into account such an important item it must therefore be flawed. Much the same argument can be advanced about approaches to learning. We know (from Biggs (1987) and others) that certain strategies achieve more desirable forms of learning outcomes. Yet once again, the model does not take account of students' approaches to learning in the sense that it is used in that body of literature.

This argument can be taken further still. What effects do other psychological traits have on one's ability to learn? What of motivation, say? Surely a student, highly-motivated, for whatever reason, will learn better than another who is, all other things being equal, less well-motivated? There may be countless other psychological factors which have an effect on students' ability to learn. When considered in this light, an explanatory model which is able to deal with only 35% of the explanation must be less than ideal. Since

65% is unknown (or at least unquantified) not a great deal of credence can be placed on what actually might be achieved if the policy recommendations based on the outcomes of this survey were implemented.

A critic could also point at the issue of causality. It might be argued (by such a critic) that just because in this study, various statistical associations (albeit significant) were found between the independent and dependent variables, that does not necessarily say anything about causality. Further it would be suggested that although students who engage more frequently in certain university activities achieve better outcomes, this does not mean to say that the former **causes** the latter. Consider the idea of frequently engaging in conversations with other students being related to higher gains in terms of learning outcomes, for example. It cannot be shown that a statistically significant relationship infers that the frequency of conversation is causing the gains. It would be argued that it is at least as plausible, if not more plausible, that gifted students are more able to hold meaningful conversations or are more conversant with a higher level of subject matter thereby allowing them to talk to fellow students more easily and more often. The act of having frequent conversations might just as easily be caused by the fact that it is a high achieving student who is having the conversation rather than the other way around.

Finally, there is the question of the operationalisation of the learning outcomes concept. In the model in this study, learning outcomes are operationalised through indicators which are students' responses to various questionnaire items. These items ask them to give their own estimates of the quantity of their gain across a wide range of dimensions, which may not represent the sum total of the desirable learning outcomes expected of the programme

or even the university in which they are enrolled. A student's own estimation of gain or performance may be far from objective and certainly cannot be taken as definitive achievement in the same way as an objective assessment covering the planned learning outcomes.

So, there are some threats to be considered and borne in mind. However, as is the case in most arguments, there is another side. Many of the points which a critic may put forward do not take into account the principal objectives of the study, which are effectively, summarised in the research questions. Some of the criticisms have a certain legitimacy in an absolute sense but much less so in the context of the research questions which this work attempts to address.

On the positive side however, the 35% of explanation of learning outcomes seems to be quite substantial when one considers the other potentially influential factors discussed above, which seem to be absent from the model. The argument for this study began with the notion of how the quality of a university might usefully be defined. It then moved on to embrace the notion that a university has many missions and that the quality of a university must inevitably be a function of the quality of each of its different purposes. It was then decided to focus on one of a university's main functions — the promotion of learning among its students, and to explore how a university might improve the quality of that function. The concept of the quality of students' learning was then defined in terms of learning outcomes.

At all times, the emphasis was to be placed on the policies or actions which a university might take to improve those aspects of the student experience over which it had some

control, in order to improve learning outcomes i.e. how a university might improve the quality of its promotion of learning among students. It was never intended that the study would produce a universal model to show how students learn. In that context therefore, the overall result of achieving 35% explanation would seem to be quite reasonable.

Certainly, most universities would be relatively pleased if it had better information about 35% of student activities which promoted learning outcomes. Universities would be especially pleased to realise also that they can exert an influence on some of these activities.

Universities can exert no influence over the innate abilities of individual students at the point of enrolment. Certainly some universities claim to have improved their quality if the overall school examination scores of the entering cohort have improved, but that does nothing for the ability of the individual student per se. In fact, the logical extension of that argument would be that the learning outcomes should improve by 10% overall if the examination scores of the freshman class were 10% better. If learning outcomes improved by only 5% in those circumstances would quality have declined? From the outset, this study was aimed at the influence that universities might have over students' learning during the period of their time at university. Ability of the individual, prior to entry, is not one of the factors that can be controlled. On the question of motivation, it is more plausible to argue that universities can motivate students. Institutional leaders and teachers can, of course, do much to motivate students. But surely this would be done via many of the dimensions of the types of engagement covered by the activity scales used in this study such as course learning, assessment strategies, interaction with lecturers and assigned reading.

The potential criticism of the models that they do not consider students' approaches to learning issues e.g. learning strategies must also be considered. Certainly, universities, can and should, make sure as far as possible that the approaches to learning strategies adopted by students are those which are known to produce higher level learning outcomes. The models discussed in this study do not examine the strategies adopted by students in their approaches to learning. Universities would do this, one surmises, by influencing teachers to use this knowledge in their teaching and by teaching students about the more desirable approaches to learning and thus increasing the chances of their adopting such strategies. It is a legitimate criticism that the instrument (and thus the models) neglect the student approaches type strategies. Including the Study Process Questionnaire (Biggs 1987) in the instrument was considered but rejected on the grounds that it would have lengthened the original instrument considerably thus potentially threatening the response rate. The decision to leave out the SPQ (and thus student approaches to study variables) was essentially one of trade off.

The next criticism discussed earlier related to the estimates of gains variables. In essence the question of how far students' reports of their gains can be relied upon and more importantly, are the gains covered by the 30 items the right ones? As to the reliability of self-reported gains there is little within the study which can be done to crosscheck for the reliability of self-reported gains. Had the study included some objective testing of actual gains in each of the dimensions covered then it would have been a simple matter to correlate self-reported gains with actual gains measured by these objective tests. As was noted above, no objective tests are applied to undergraduates in Hong Kong against which such findings could be cross checked. True, a special set of tests might have been built into the research design but this would have been extremely costly and difficult, if not

impossible to conduct. Instead, as was noted in earlier chapter, the work of Pike (1995) must be relied upon principally to produce sufficient evidence that students do report accurately and that the CSEQ gains items are 'construct valid'. Pike (1995) concluded that, by measuring students' reports of their gains against actual achievement in objective tests, considerable reliability could be placed upon the self reports by students.

On the question of the inclusiveness of the gains item (the content validity question discussed at the beginning of this chapter), some evidence is provided within the study itself. The factor analysis produced a coherent seven factor model which produced easily identifiable factors. Had the gains items been selected poorly or with no thought to the coherence of the scales themselves, this would not have been possible. Those associated with the CSEQ (primarily Pace (1984) and Kuh (1995)) do not discuss the origins of the Gains items. Certainly, in Kuh, Vesper, Connolly and Pace (1997) the high reliability is discussed but the only reference to the inclusiveness of the items is the reference to the:

...progress or gains students make in areas considered by experts to be important outcomes of college attendance.

Kuh et al. (1997, p. 4)

In the adaptation phase, the additional seven items were added to the original 23 CSEQ gains items. One criticism which might be levelled is that the Gains items are too general. Certainly they measure worthwhile areas which could hardly be denied as desirable learning outcomes from higher education but nowhere do they take account the desirable learning outcomes of the particular field of study. In other words, the Gains scales do not cover what in North America would be called 'the major'. If an engineering student at the end of his undergraduate career has become a better potential leader, become familiar

with computers or has become able to learn on his or her own then that would all be very well and good. But if the same student had failed to master the central tenets of the discipline such as thermodynamics and fluid mechanics; design of structures or power engineering, then his or her undergraduate education could not be called an unqualified success. In retrospect, therefore, it may have been wiser to attempt to deal with gains related to the particular discipline in these scales. This would have been done by including an item or set of items asking students to rate their progress towards the 'primary course objectives of your discipline or programme'.

It is suggested that the question of causality is not a fatal flaw in the usefulness of the results of the study either. If the study had set out to determine a universal model to explain how students learn, then the notion of the causal direction of the statistical associations would be much more important. Not all of these associations in this study are conclusively of one direction or another. Does that make the whole exercise invalid? Again, one of the primary features underpinning this work from the outset, i.e. that the outcomes must be relevant and applicable must be asserted at this point. In many of the cases, common sense would determine that, when it seems that certain student activities such as engagement with others is highly **associated** with improved learning outcomes, even if there may be competing arguments as to the direction of causality, this would still have a considerable influence in policy making and management of those institutions hoping to improve quality.

In summary then, the determination of 35% of the variation in learning outcomes would seem to be relatively useful in terms of the overall objectives of the study. It is further believed that the study demonstrates sufficient validity and reliability to allow the results

to be discussed in a meaningful way and for conclusions to be drawn with some certainty (albeit qualified where necessary). In the following paragraphs, the most important features of the results will be discussed and considered in the light of the framework described above.

Characteristics of the Student Experience in Hong Kong

In terms of some basic demographics, the Hong Kong undergraduate population differs from that of their US counterparts and probably from other mature higher education systems in the west. Fewer Hong Kong students are mature, live away from home, or have a parent who has experienced higher education. In most cases the difference is quite striking. Further, as was noted earlier, Hong Kong students are almost all ethnically homogeneous. Although the US data do not contain information about ethnicity it is generally well known that the USA, as a multicultural society supports a university system which consists of students both from home and, perhaps more importantly, abroad, and from a variety of racial and ethnic backgrounds. Hong Kong universities contain few students from overseas. What effect will this have on the student experience? Intuitively, one would surmise that exposure to fellow students with different levels of experience (mature students); different types of experience (students from overseas) and different experiential roots (students of different ethnic traditions) would broaden and enrich the student experience. If this is true then it should be reflected in the scores reported by each group to the activity scales and gains scores.

From the survey results it can be seen that only 9% of Hong Kong students have ‘had serious discussions with students from a different country?’ (Appendix 2, Table 2.7,

Student Acquaintances). (There are no comparative US data available). This would seem to be a particularly low figure in world-wide terms but understandable in the Hong Kong tertiary context. More importantly perhaps only 33% and 22% respectively of Hong Kong students report that they have 'become aware of different philosophies, cultures and ways of life' and 'gained knowledge about other parts of the world and other people' as opposed to 48% and 32% of US students. Although these differences seem quite substantial across the range of gains scores differences they are by no means out of the ordinary. Indeed one might have expected these to be among the items where the greatest percentage differences might be seen.

Interestingly, some studies in North America have found that attending a predominately mono-ethnic college or university can have a small positive effect in both attainment and persistence (Astin, 1975, Cross and Astin, 1981). That said, these studies have focussed mainly on black students in mono-ethnic as opposed to multi-ethnic college environments where social and racial tensions seem to be the main determinant of relative failure.

The differences between Hong Kong and the US are however, large, and must be of concern to Hong Kong policy makers who place so much stress on internationalisation as one of the key determinants for the future of the Hong Kong's economic success. (Policy Address, 1999)

A much higher proportion of US students (68%) as opposed to Hong Kong students (32%) have lived in university housing. This is coupled with the fact that a higher proportion of Hong Kong students (76%) live in the family home and attend university, as opposed to only 16% of US students (see Tables 6.5 and 6.6, p. 137/138, above 'Students

who have lived in university housing'). Intuitively, one would expect this factor to have an effect on the student experience since many of the opportunities for engagement centre on campus life and campus leisure activities. In the earlier focus group discussions, the whole section from the original CSEQ dealing with Student Union activities was not meaningful at all to the Hong Kong respondents. This scale described largely social and intellectual activities, often held at night, which took place in the Student Union, a concept which does not exist in the same form in Hong Kong. There can be little doubt that much of the interaction between students themselves and opportunities for other forms of engagement need to take place in a suitable environment whether it be physical, social or structured. Without an after class campus centred life, the opportunities for such student activities which, as has been seen, are highly associated with learning outcomes, must be somewhat lessened. Campus residence, one would anticipate, must contribute to those opportunities.

Overall, it can be suggested that these demographic factors are likely to have some effect on the student experience in Hong Kong. The comparative narrowness of the overall university population is likely to mean that Hong Kong students are less exposed to a richness of experience and cultural tradition. Much of this is due to the relative immaturity of the higher education system. This may change for future generations but for the time being, the present generation of undergraduates complete their university experience in circumstances which are less broadening than their counterparts in the US. It was also noted that fewer Hong Kong students take part-time jobs than in the US. It is not clear why this is the case. It may be because there are fewer job opportunities in Hong Kong or that fewer students need to work to pay for their tuition fees.

Alternatively, it may be that higher numbers of course related hours mean students have less time available to take part-time jobs. It would be interesting to explore further whether total hours spent on course related study and part time working impact on the opportunity for levels of engagement in informal student activities. If, as is likely to be case, informal student activities positively influence learning outcomes then the opportunities which remain available for these activities after course related activities and part time working may be a major factor. Further study into the effect of the combination of these two factors would be necessary before definitive conclusions can be drawn. Part of this equation may also be the proportion of university expenses which students have to bear themselves. Similar proportions of the US and Hong Kong students report having to bear all or part of their higher education expenses. It would be quite reasonable to expect that the majority of those students who take part-time jobs while at university do so out of economic necessity. All three of these variables would require further study to elicit more meaningful conclusion but this whole question may have policy implications which will be examined further later.

The Activity Scales: Conclusions

What overall conclusions about the characteristics of the student experience in Hong Kong can be drawn from the results of the activity scale sections of the results? A first impression from Table 2.1 (Appendix 2) must be that there are surprisingly few items from the 110 or so which make up these scales, in which a majority of students engage. In total for the Hong Kong students, a majority reported frequent engagement in seventeen. For the US students similar results were found in the Course Learning section and the Experience with Writing section. However, there were thirteen more items where

a majority of students reported frequent engagement in the US results. Without exception, these thirteen involved interaction with staff or with fellow students. (There is no Experience with Computers section of the US version of the questionnaire, the CSEQ.)

If it is accepted that the activity scales operationalise the concept 'quality of effort and levels of engagement' then it would seem, overall, that the Hong Kong students are less heavily engaged than their US counterparts. If we take the normalised scores on the Activity Scales then there are a number of noticeable features. First, although many of the differences are statistically significant (in nine of the ten comparable cases), the actual mean values are quite close. As has been noted above, the large sample size means that relatively small differences will produce statistically significant results. Nonetheless, the US mean scores are higher overall in seven of the ten comparable scales. Second, a majority of Hong Kong students report frequent engagement in seventeen of the possible 110 or so items. Their US equivalents report majority of students having frequent engagements in 24 items of the approximately 110 equivalent items. The Hong Kong items where a majority of students are frequently engaged, are, broadly speaking a sub set of the US items. There are one or two minor exceptions i.e. Hong Kong students reported a majority of their number engaging in four computer related experiences (i.e. four of the seventeen) and these can be discounted for comparative purposes since the 'Experiences with Computers' section does not exist in the CSEQ. Thus, on a strictly item for item basis in the US there are 24 items of majority frequent engagement compared to thirteen in Hong Kong.

As was noted earlier, of the remaining eleven items, almost all are in some form or another, connected with interaction with staff or students :-

Table 8.1
Majority frequent engagement in the US but not in Hong Kong

	US%	HK%
‘Talked with a faculty member’	63	25
‘Asked a faculty member for information concerning the course’	54	28
‘Explained material to another student’	62	18
‘Told a friend about reaction to another student’	63	46
‘Sought help of a friend’	55	44
‘Made friends with students of different majors’	65	34
‘Made friends with students of different backgrounds’	56	42
‘Made friends with students of different ages’	59	26

Some of the differences, e.g. ‘Talked with a faculty member’ are very large indeed. From these comparisons it would seem that the Hong Kong students spend less time interacting with their peers and staff members as part of their learning experiences.

Since we know from Pascarella and Terenzini (1991) as well as Astin (1984) that informal contact between students and staff as well as between students themselves are key dimensions of the engagement concept which improves student learning outcomes, this could be an extremely important finding. It will certainly be important to ascertain whether these types of variables have an impact on students’ learning outcomes.

In general, more US students report frequent engagement across the board than their Hong Kong equivalents. One activity scale where this is not the case is the Library Experiences scale where greater use is reported by more Hong Kong students. Indeed, in the case of two items, a majority of Hong Kong students report frequent engagement. As

was explained above, this is largely due to the fact that there are few alternative self-study options available to students in Hong Kong and so the space in university libraries is a precious commodity. For Hong Kong students, libraries are not, simply, repositories of books. Instead they are sometimes the only places where students have to study since their homes are too small and too crowded to allow private study.

When the Hong Kong scores and percentages are compared to the US norms there seemed to be some evidence from the Course Learning and Experiences with Lecturers scales that Hong Kong students seem to exhibit a pattern of being less interactive with others during their student experience than their peers in the US. This theory was not supported in the Clubs and Organisations nor Personal Experiences scales where the Hong Kong and US scores were similar. It would seem reasonable in that case to modify the tentative conclusion to interaction with members of staff rather than students. The Clubs and Organisations and Personal Experiences scales tend to concentrate, in the main, on relationships with fellow students. The Course Learning, and especially, Experiences with Lecturers scales deal with classroom interaction with a lecturer, or direct one to one contact with a member of staff. If this is the case then an explanation may be found in the different relationship models between lecturer and student (or in Confucian terms ‘teacher and pupil’).

Reid and Mak (1992) reported, as was noted in Chapter 2 above, that the Confucian role model sets are an important factor in the higher education process in Hong Kong. One of these – teacher/pupil – may be playing a part in this particular observation. The ideal model sets place a dominant versus subordinate role in Confucian societies. If students in Hong Kong view their lecturers in the light of this particular model-set, then it perhaps

less unsurprising that they seldom engage their teachers in discussion or question them. The pupil is the subordinate role in the relationship and that must be maintained at all times. This would certainly seem a plausible reason for the differences. One other possible explanation which cannot be ignored is language. A proportion (in some universities especially, a significant proportion) of lecturers are not Cantonese speakers. Students lacking in confidence in their English may not relish engaging a member of staff or participating in class discussions where English must be the medium.

There are also level of engagement differences between the different university sub samples. Some of these, particularly General Scientific Knowledge may be explained by the different discipline mixes within the universities. Although the sample is representative of the overall population and it would seem that each university sub sample is representative of the sub population in that institution, because the universities are not homogeneous in terms of their discipline balance each university sub samples is different in terms of discipline mix. HKUST in particular, has a strong science and technology focus and it could be that factor which leads to the differences between that university and its sister institutions. In one scale, 'Personal Experiences' it was suggested that a gender balance difference may have accounted for some of the more extreme differences between certain universities. That said, when a new discipline based variable was created and entered into the models no significant statistical association was found. Similarly gender, when entered into the models, did not prove to be statistically significant. This does not mean that such influences do not exist. It simply means that there is no evidence in this study to suggest that it does.

That said, there remain differences between the activity scale scores which are statistically significant (see Table 6.16, p. 153 above). Certainly there are differences between the US student experience and that in Hong Kong. This conclusion is interesting though hardly surprising given the cultural differences between the two societies and the fact that, for example, Hong Kong students learn in a second language. There are also differences between the universities in Hong Kong. For example, the two former polytechnics report lower incidences of involvement with Student Acquaintances and involvement in Clubs and Societies. However it may be that the structure of programmes and the higher level of evening part time provision is a factor. Other differences may be attributed to the discipline bias of the university or the mission and ethos.

Overall, however, the scores on the activity scales seem to indicate that fewer Hong Kong students report instances of engagement than their US counterparts. From the work of other researchers it can be anticipated that this will have a negative impact upon learning outcomes.

Estimates of Gains

From the description of the Estimates of Gain results (above), in general it would seem that more US students report gains than their Hong Kong counterparts. Does this necessarily mean that US students, in terms of the overall argument, have a 'better' quality student experience than their Hong Kong peers? Certainly that is one possible solution but it is just as plausible to suggest that US students are better predisposed to higher education than Hong Kong students. Why would this be so? One possible explanation for this might be that, as was noted earlier, this cohort of Hong Kong

students is among the first to enter higher education in large numbers. Very few had a parent who had attended university. In the US, on the other hand, many generations have benefited from 'mass' higher education. Because of that it is perhaps more widely regarded as a worthy and beneficial experience. Thus they may be more inclined to report gains.

What might be even more plausible is that US students may be able to relate their learning experiences to gains more easily than the Hong Kong students can. Perhaps it would be useful to elaborate this point. If in the US classroom, the instructor sets out the learning objectives of a course or an assignment or of a single classroom session (which would be conducive with current perceptions of best practice – see for example the Wingspread Report (Wingspread Group on Higher Education, 1993)), in setting out the learning objectives the students may be better placed to put that particular learning experience in the context of gains. If, in contrast, Hong Kong students are less aware of the relevance, in terms of the gains dimensions, of any particular learning experience then they may not be explicitly aware of the gains that have actually taken place.

At the moment, this notion is no more than a speculative theory. But one can easily see that it is a plausible explanation for what would otherwise be a difficult set of differences to explain. Even if this theory proves to be spurious, nothing at all would be lost if in Hong Kong, university managers embraced some of the 'good practice' ideas in teaching and learning. Further consideration will be given to this notion in the policy recommendations in the next chapter.

One further interesting observation is that the Hong Kong students did report more common gains than their US peers in the science and technology related items and, indeed, the overall General Scientific Knowledge factor. There may be several possible reasons for this. One is that there may be more students of science and technology in the Hong Kong sample (and population) than in the US. Naturally one would expect students of a relevant discipline to report gains in that area. Alternatively, there is always the possibility of 'self-fulfilling prophecy'. Anecdotally, Hong Kong students are often painted as being mathematically and scientifically 'inclined'. This possible self-perception may result in more students claiming gains in that area. Also, the influence of new technology may be important here. Experiences with Computers were not included in the CSEQ data. Its inclusion in the Hong Kong version may have influenced students to report gains in computing.

Across four of the factors (General Education, Cognitive and Intellectual Development; Personal and Social Development; Civic and Moral Development; Vocational and Career Development) the percentage of US students who report gains on the highest loading individual items on each of these factors is greater than the percentage of Hong Kong students. It is only in General Scientific Knowledge that more Hong Kong students than US students report gains. (For this comparison the Language and Communication factor has been left out since there is only one common item in the scales.) A caveat should be inserted here about the factor Cognitive and Intellectual Development. Although the US scores are higher, the difference is smaller than in other factors. Should this be of concern to university managers in Hong Kong? Is it simply that US students have an overall more positive view of the benefits of their higher education experience or are they actually achieving more gains?

From this data alone, it is difficult to ascertain whether or not this is the case. There may be some kind of 'halo' effect about higher education for US students which does not exist in Hong Kong. Alternatively it may be that US students are actually gaining more than their Hong Kong counterparts. After all their levels of engagement are higher so it should not be unexpected that their reported gains are also higher.

If the differences among the Hong Kong universities are examined, then the overriding conclusion must be that the results reflect the perceived mission or culture that these universities practice (or are believed to practice). For example, HKBU with its emphasis on the development of the whole person scores highly on General Education whereas HKUST with its science and technology emphasis scores very highly on scientific and technical knowledge. If, as is being suggested, that students, in their responses, are a reflection of their university's mission and ethos then that must be very pleasing for the university managers who have developed and fostered that mission. That apart, the Hong Kong students exhibit broadly the same characteristics among the institutions.

Other Issues

Reading and Writing

For many, reading and writing would be seen as being at the heart of the teaching and learning process. Thus, reading and writing tasks and opportunities must be fairly central to the 'student engagement' concept. In fact Davis and Murrell (1993) discuss student manifested behaviours and in particular the quality of effort and investment of energy in the learning process. They measure this form of direct engagement by quantifying the writing output and reading effort. Assigned and non-assigned readings, term papers and examinations should form an important part of 'student engagement'. However, the **quantity** of readings, assignments and essay type examinations does not attest at all to the length or **quality** of that work. Neither does it really indicate the amount of effort that has to be put in on the student's part. So conclusions based on considerations of quantity alone must be fairly tentative.

That said, the results seem to show that, in terms of quantity of readings, the US students and the Hong Kong students do not differ greatly. The figures are broadly similar but with the US students perhaps being at the lower end of the overall scale. Few differences have emerged among the Hong Kong universities.

The language issue must be a factor here. Since Hong Kong students are reading in a second language that may have affected their reading patterns. But it is not immediately obvious whether that would have made them more or less likely to read as many books or

articles as their US counterparts. Although one can see arguments both ways, on balance it might have been predicted that since Hong Kong students can be expected to have more difficulties in reading in a foreign language that they would read fewer books and articles. If indeed this is the case, then the results of this survey do not bear that out. Hong Kong students read at least as many books and articles as their colleagues in the US even though, for them, they are reading in a foreign language. On the other hand, the written form of Chinese-based on Putonghua is also in a sense 'foreign' to the Cantonese speaker.

When it comes to the number of writing activities carried out by students the results are a little bit different. More US students report greater quantities of written assignments and essay type examinations than do their Hong Kong opposite numbers. A high proportion (23%) of US students complete eleven or more written assignments in a year. In some ways the extremes are quite interesting. Quite a number of students indicate that they do no reports / assignments whatsoever (12% in Hong Kong and 8% in the US), yet at the same time (4% and 6%) are doing over twenty pieces of work. As was noted above, that in itself tells us only a part of the complete story — quantity does not attest to quality.

Nonetheless, even if only a partial conclusion can be drawn from the number of pieces of written work, the US students seem to be doing assignments more frequently. These assignments may of course be shorter and the overall workload may be the same.

Alternatively, perhaps frequency (irrespective of length) may be an indicator of engagement. It may be that it is having a number of assignment tasks which is important for students and not necessarily the size of each one.

Reading and writing activities it has been argued, are seen by some as being at the heart of scholarly engagement. Unsurprisingly, several researchers have reported that the effort

expended in these activities lead to improved learning achievements (see for example Pace, 1980, 1984, Johnson, 1981 and Kiewra, 1983). Assigned writing and or reading tasks (as opposed to voluntary tasks) would seem to have a positive effect on learning outcomes if one accepts the evidence cited in the studies above. It would therefore seem to be sensible to promote these kinds of activities in teaching strategies. In one sense researchers know this already but the evidence is clear that quality and frequency improve learning. Whilst in one sense the adoption of a particular teaching strategy is the prerogative of the individual instructor or teacher, certain institutional factors can influence such matters e.g. staff development, course structure, assessment policies and regulations. This question will be considered again in terms of the policy implications later.

Perceptions of the University Environment

Returning now to the Perception of the University Environment scales, (see Appendix 2) as was noted earlier, the US students tend to rate their universities more positively than do the Hong Kong students. The mean scores are higher on all of the comparable scales. That said, the rankings of items on the scales are broadly similar. It is difficult to know exactly from this evidence alone, why Hong Kong students have a lesser perception of their university environment. It was noted earlier that Hong Kong students report fewer gains than their US counterparts and some reasons for that were suggested. Some of the same reasons (e.g. first generation higher education students being unaware of what to expect) may apply here also. There may be other explanations. Because of the structure of the admissions system, a high proportion of Hong Kong students are not admitted to their first choice university or discipline. It would be understandable if this adversely

affected their perceptions of their universities. Further research would be necessary to find out exactly what Hong Kong students' perception of their university environment really is.

The Regression Analysis

Having dealt with the largely descriptive analysis of the student experience in Hong Kong, it is appropriate to turn now to the most substantive part of the analysis which concerns the relationship between the student activities variables and the estimates of gains variables. It is principally from here that meaningful policy recommendations will emerge. In the previous chapter, each of the statistically significant variables was described in relation to each of the types of knowledge, which had emerged from the factor analysis of the estimates of gains items. The task in this section will be to try to understand what these results mean and also to evaluate the relative importance of each contribution in some meaningful and useful way.

Clearly some activity scales and other variables appear in each of the regression models more frequently than others. The problem then becomes how to evaluate their relative importance. Certainly, statistical significance has been shown but what of substantive significance? If policy decisions are to be made on the basis of these findings then substantive significance must be shown and some kind of weighting or priority ordering must be attached. Also, within the scales and other variables themselves, meaning is not always clear cut and unambiguous. All of these problems must be set in an order so that meaningful conclusions can be drawn.

One simple method of evaluating the explanatory variables would be to tabulate the number of times that variables appear in the predictive models and overall in the 'Total Gains' model. Although crude, this will allow tentative conclusions to be drawn which can guide the policy recommendations. Consideration must also be given to the general suitability of the model. Table 8.2 summarises the variance explained in each of the individual predictive models.

Table 8.2
Adjusted R² for each factor

Factor	Variance explained (Adjusted R ²)
General Knowledge	0.32
Cognitive and Intellectual Development	0.32
Personal and Social Development	0.28
Scientific Knowledge	0.48
Moral and Ethical Development	0.32
Vocational and Career Development	0.22
Language and Communication Skills	0.26
Total Gains	0.35

The first consideration must be to consider the value of the overall model. The model seems to be statistically robust and the findings in terms of the percentage of variance explained are similar to the findings of others. It has been noted that Kuh, Vesper Connolly and Pace (1997) tested a Sub-model of Pascarella's General Causal Model and obtained an R² value of 0.34 for the complete explanatory model and partial correlations of between 0.22 and 0.42. In other words, the coefficients found in the US were broadly similar to those obtained in Hong Kong when the relationship between certain experiences and broad educational gains were considered.

So the multiple regression coefficients found in this study would seem to be in the same general range as other studies. Obviously this confirmation brings a certain level of

confidence about the results of the study overall. Results which show a marked dissimilarity to previous studies in the same area would cause certain doubts about reliability and replicability. However, it would seem, on the face of it, that the results from Hong Kong are in line with similar research undertaken by others.

The overall model is certainly not so far out of line as to cause fundamental questions to be asked. We can return therefore to the question of the evaluation of the worth or contribution of the different explanatory variables which will, in turn guide the policy recommendations. As a first step we can consider a table of the frequencies in which the explanatory variables are shown to be statistically significant in the seven models.

Table 8.3
Summary of R² changes (frequencies)

Variable/Item	R ² change			
	>0.005	>0.02	>0.05	>0.10
Library Experiences (LE)	1	--	--	--
Student Acquaintances (SA)	3	--	--	--
Experience with Lecturers (EL)	4	1	--	--
Experience with Writing (EW)	2	2	2	--
Topics of Conversation (TC)	6	3	3	3
Number of Assignments (Q162)	1	--	--	--
Information in Conversation (IC)	6	4	3	3
Experience with Computers (EC)	1	1	--	--
Course Learning (CL)	6	3	2	--
Campus Residence (CR)	1	1	--	--
Clubs and Organisations (CO)	3	1	1	--
Athletics and Sports (AS)	1	--	--	--
General Scientific Knowledge (GS)	2	1	1	1
Number of study hours (Q15)	2	1	--	--
Number of essay-type exam (Q161)	4	1	--	--

This table is relatively 'non-scientific' in so far as the categories of R² change are arbitrary. It merely allows some overall impressions to be gained of the relative contribution of each of the variables. Quite clearly the two 'conversation' variables are having a considerable impact on the explanatory model. In six out of the seven individual

types of learning outcomes (the factors) either Topics of Conversation or Information in Conversations is causing the greatest R^2 change (all greater than 10%). Unsurprisingly, when Total Gains are considered, both of these variables prove to be significant. (R^2 change for Topics of Conversation is 23% and for Information in Conversation it is 1%).

It would be prudent at this stage to examine these scales to try to obtain a clearer understanding of what they mean. The Topics of Conversation scale is the largest with seventeen different items whereas Information in Conversations has eight items. In one sense, they can be seen simplistically as indicating the frequency or volume of discussion with other students about 'worthy' topics (with the possible exception of the one item 'personal relationships'). The Information in Conversations scale contains a number of items which can be seen as referring to course related issues, e.g. 'Referred to knowledge you had acquired in your reading'; 'Referred to something a lecturer said about the topic' and 'Explored different ways of thinking about the topic'.

The 'Topics of Conversation' scale on the other hand, is more broadly related to what one might refer to as 'general knowledge' e.g. 'Current events in the news'; 'Different life styles and customs' and 'International relations/politics'. So, although these two scales are closely related they are different and as such they may well be telling us different things about students' interactions with each other. That said, their impact on the explanatory model is considerable and so must be examined carefully to determine what meaningful conclusions can be drawn. Learning from interaction with other students is not a new phenomenon. A number of researchers review the previous research on this very issue and conclude:

The general results of this body of evidence suggest that students...find their interactions with peers to have had an important influence on their development.

(Pascarella and Terenzini, 1991, p. 150)

and also:

Peer involvement, like faculty involvement, is positively related to academic and personal development. Peer interaction on intellectual topics has the strongest influence on student growth and development, particularly in the case of honours programs that create environments fostering student interaction. It also appears that a deficit explanation of the effects of social interaction among peers is appropriate. High levels of involvement in athletics and academics clearly inhibit social involvement and are associated with low levels of students growth and development in certain areas.

(Pike, Phillippi, Banta, Bensey, Milbourne
and Columbus 1989, p. 208)

The results of this Hong Kong study would seem to indicate that the conclusions of this previous research can be borne out and perhaps just as importantly, hold in Hong Kong as well as in the west. If further evidence of the importance of student interaction was needed, the results of this study show that the Clubs and Organisations variable also appears to cause important R^2 changes (see Table 8.3). This scale also relates in part to the amount of interaction between students albeit in the semi formal setting of a club or other organised activities. It may be worth noting here that the Student Acquaintances scale does not figure so prominently and from the discussions above, one might have expected it to do so. However, a closer examination of that scale reveals that the items included refer, (despite its title) more to types of student acquaintances. Since the Hong Kong students, as has been noted earlier, are largely homogeneous ethnically, socially and in terms of maturity it is unlikely that a high score in this scale would be common. Few Hong Kong students will have the opportunity to 'Talk to /spend time with students from

another country or culture’ or ‘Talk to / spend time with students whose age was very different from yours’.

Table 8.3 also shows that the General Scientific Knowledge scale has a substantial influence on one factor in particular which has also been titled General Scientific Knowledge. This is hardly surprising given the nature of the scale and of the factor. Nonetheless, that scale features in Total Gains as the third variable entered bringing about a relatively high R^2 change of 0.13. It would be unwise to consider too seriously the suggestion that activities or engagement involving scientific ideas, methods and topics have an effect on learning outcomes more broadly than simply in the science field itself. There is no strong evidence to support that idea beyond the major impact on Total Gains. General Scientific Knowledge is associated positively only with Factor 6 Vocational/Career Development and has a negative association with Personal /Social Development. The explanation for the impact on Total Gains may simply be statistical insofar as the explanatory model for the General Scientific Knowledge factor obtains the highest overall R^2 figure at 0.47 and of that variance, 0.42 is provided by the single explanatory variable — the General Scientific Knowledge scale. Thus, the overall Total Gains model which is after all simply a summation of all the other factors will inevitably reflect the General Scientific Knowledge scale’s effect because of its strong effect on the General Scientific Knowledge factor. It is not possible therefore, from these results, to say definitely one way or the other whether General Scientific Knowledge has an important effect more widely.

Two other variables — Experiences with Writing and Course Learning each cause a 5% or greater R^2 change in one or more dependent variables. In the case of the former, it is

included in the Language and Communication Skills and General Knowledge explanatory models and the latter in Cognitive/Intellectual Development. It should also be noted that Course Learning appears at the 0.5% R^2 change level in six of the seven models as well as in Total Gains where it produces a 2% R^2 change. Experiences with Writing does not have such a broad effect. Course Learning consists of a number of items which can loosely be described as relative to study skills i.e. 'Took detailed notes in class', 'Summarised major points and information in your readings or notes' and 'Thought about practical applications of the material'.

The Experiences in Writing scale again deals in part with certain 'writing related' techniques i.e. 'Wrote a rough draft ... and then revised it'; 'Used a dictionary or thesaurus to look up the proper meaning of words' and 'Asked other people to read something you wrote to see if it was clear to them'. This scale is not so much about quantity of writing. It is more about techniques. Quantity of writing is dealt with by other variables principally Q161 and Q162. It should be noted at this point, however, that neither of the variables in question appears in the Total Gains model.

One relatively obvious but nonetheless important conclusion which can be drawn from the results is that good study practice does indeed result in positive benefits. All of the items in these two scales refer to the academic engagement type of activities. The benefits of such effort has been well documented by previous research. (see for example Astin, 1984, Rosenshine, 1982). Although engagement and quality of effort for certain researchers (such as Pace, 1987) are dealt with almost as a single index, others have highlighted 'academic effort' in particular as a key determinant. In that sense at least this study in Hong Kong confirms these findings.

From Table 8.3 there remain two other variables worthy of comment. Q161 'No. of essay type exams in your courses' and 'Experiences with Lecturers'. Each appears in four of the seven models, one at R^2 change of greater than 2%. Both also appear in the Total Gains model. One can immediately surmise that these variables have a broad effect across all of the dependent variables. Experience with Lecturers deals largely with both formal and informal associations with faculty members i.e. 'Talked with a Lecturer'; 'Had lunch/tea/coffee casually with a Lecturer' and 'Asked your Lecturer for comments or criticisms about your work'. It was noted earlier that the level of engagement on this scale was considerably lower among the Hong Kong students than was the case among the US students. Nevertheless, this variable is still important in predicting Hong Kong students' learning outcome gains across a range of variables.

Other researchers (see for example Endo and Harpell, 1982, Terenzini, Theophilides and Lorang, 1984) have reported statistically significant, positive associations between informal student-staff interactions and various (usually self-reported) learning outcomes. Thus it should be no surprise that this variable plays a part in the Hong Kong models as well. The interesting fact about the Hong Kong study is on the one hand the frequency of interaction is much lower but on the other, outcomes are still affected. The cultural differences between the Hong Kong students' relationships with their teachers and that of western societies was noted in Chapter 3 above. In these circumstances where Confucian role sets may apply, it could not be clear whether a similar effect would be found. That it has been, will have some implications for the policy recommendations to be discussed later.

A similar effect can be seen for the variable Q161 — No. of essay type exams. Again it is positively associated with a broad range of outcomes and also in Total Gains. Although this is a different type of variable, being a single question rather than a scale, it is interesting to note its impact. There are only two assessment variables, both of which appear in the models but this has a broader impact than Q162 — ‘No. of assignments’. Others have indicated the importance of the ‘backwash’ effect of assessment strategies for some time (see Biggs, 1996). But there seems to be a clear positive association in students’ perceptions about their gains and, in this case, ‘essay type exams’.

Q15, the variable which measures the number of study hours is significant in the General Science and Vocational and Career Development models. In one sense, this can be seen as a single overall variable indicating levels of engagement on academic activities i.e. ‘how many hours a week do you spend on course related activities?’. One might reasonably have expected a greater impact than that which was found. Questions such as ‘how much time?’ are notoriously difficult to answer accurately and, of course, students may interpret course related activities differently. Because of its positive association with the General Science factor, there may be a hint of a discipline effect here if, say, science and technology students are reporting having to spend more time in course related activities. Certainly during the focus group discussions, the students from HKUST which is heavily technology biased, complained about their workload. Another indication of this is that Q15 was negatively associated with Factor 1 General Knowledge. One might surmise that students from the technology based disciplines may be reporting higher course related hours and fewer gains in general knowledge. That said, when tested, the ‘science and technology’ discipline effect was not found to be statistically significant.

Many of the explanatory variables in the model did not have a major impact on the dependent variables although in some cases they were statistically significant. From Table 8.3 it can be seen that Library Experiences, No. of Assignments and Athletics and Sports only appear once in each case. None of them are significant in the Total Gains model. We noted earlier that the Hong Kong students' Library Experiences scores were higher than their US counterparts. Nonetheless Library Experiences makes a significant appearance on one model (General Education). Intuitively one might have expected a more significant impact. Similarly, No. of Assignments was, intuitively, expected to be a major factor given that it is a key tool used by teachers to promote learning and some would argue that it is at the heart of academic engagement. Certainly those studies which have looked at 'classroom engagement' tend to stress discursive activities such as 'how often students express their ideas in class' (Pascarella and Terenzini, 1991). The discussion and interaction conclusion would seem to be consistent with findings of the Hong Kong study.

Some interesting observations can be made about the variables which did not feature prominently in the models (at least insofar as they did not achieve statistical significance at the chosen criteria level). The variables in question are Personal Experiences; Q158 — No. of textbooks or other assigned readings and Q159 — No. of non-assigned course books. Interestingly, Personal Experiences does not register in any of the models even although it does deal in part with student interaction. Given the prominence of the 'Conversation' variables, one might have expected the Personal Experiences scale to be more associated with learning outcomes than has proved to be the case. However, as can be seen from the examination of the scale items the content is distinctly different from the content of the conversation variables. Personal Experiences contains conversation themes

such as — ‘told a friend why you reacted to another person the way you did’; ‘discussed with other students why some groups get along smoothly and other groups do not’ and ‘asked a friend to tell you what he/she really thought about you’. We can therefore tentatively begin to suggest that whilst there is an association between students’ interaction and their learning outcomes, the content or subject matter involved would seem to be important. Again this will be an important factor to be taken into consideration when formulating the policy recommendations based on the outcomes of this study.

Both Q158 and Q159 are related to reading. It is important to note that in this study no evidence was found that the amount of assigned or non-assigned reading was associated with students’ estimates of gains. One could have reasonably hypothesised that quantity and breadth of reading would have had a major influence but no evidence was found to that end. It is important to note again that it cannot be concluded that reading has no influence on learning outcomes, but simply that the study produced no evidence to show that there is a positive influence.

In general, there may be a statistical effect taking place in respect of the single item variables. In most cases, they are four or five point scales. As such, the opportunity for variation within a short scale is much less than in the activity scales which lie in the normalised range $10 \leq x \leq 40$. In order to provide some evidence to show that this scalar effect was not interfering with the results, the variable Total Gains was regressed against all of the individual variables in the dataset (i.e. introducing into the model each of the scale items as a single item (on a four point scale) and not summed into a scale value). From that analysis it was seen that only Q161 (of the short scale items) figures in the

equation (at the 28th iteration of the model). None of the other variables fulfil the criteria for entry into the model. So that means that it can be said, with some assurance that it is not a scale effect which excluded Q158 and Q159 (and others) from the model. The lack of evidence regarding the positive effect of quantity and quality of reading, apparent from the analysis of Q158 and Q159 is supported up to a point and the relative 'underperformance' of the Library Experience scale is consistent with results for Q158 and Q159, the other reading related variables.

Conclusion

Before moving on to the policy recommendations arising out of this study consideration must be given to the central hypothesis that is being examined and discussed. In its simplest form the question being asked is whether certain student activities bring positive results in terms of learning outcomes. This study has argued that this is where the quality of the teaching and learning dimension of a university's activities lies. It can be asserted, with various caveats, that certain forms of engagement produce desirable learning outcomes. Thus, for the definition of quality adopted in this study quality can indeed be found in the student experience and expressed in terms of learning outcomes.

In this study various positive (and sometimes negative) statistical associations have been found. Had the principal objective been to try to build a model showing how learning outcomes, are caused (i.e. a universal model), then there would have been two main problems with any conclusion formulated in this way. The first is that certain key variables which one might suspect have an effect on gains (e.g. ability and intelligence) were unable to be collected so they could not be controlled for in the analysis. In other

words the 35% or so degree of variance in learning outcomes which was found to be associated with gains may be being caused in whole or in part by a prior variable, say ability or intelligence and the activities scales may simply be confounding variables in the model. The reasons why it would have been seriously counter productive to attempt to gather data on students' entry qualifications say, as an indicator of prior ability were set out earlier. Moreover, for the purposes of providing policy advice to university managers, the association (as opposed to the absolute causal relationship) between engagement and learning outcomes is felt to be sufficient.

The second potential problem is concerned with the ambiguity of causality. In the discussion of the results of this study there is an assumption that the relationship between activities and learning outcomes is in terms of a one way 'causal-type' influence. This cannot be proved absolutely since a competing hypothesis, cannot be ruled out. That hypothesis is that positive learning outcomes motivate or influence students to become more heavily engaged in engagement type activities. Or, more plausibly, that there is a circular relationship. There is a sense in which activities promote positive learning outcomes and that, in turn provides an incentive, encouragement or whatever to increase levels of engagement.

Perhaps the overall conclusion of this discussion can be enhanced by drawing on a legal metaphor. The case being argued is not that positive learning outcomes are exclusively caused by student experiences. Instead, it is argued that the various dimensions of the student experience are associated positively with desirable learning outcomes. It is believed that the evidence presented proves this case beyond reasonable doubt.

Satisfaction of this test is surely sufficient to make policy recommendations. These will be discussed in the next chapter.

Chapter 9: Policy Recommendations

Introduction

At the very beginning of this work, the importance of producing results which were applicable in the real world was stressed. In this chapter, various policy recommendations will be made. The field work for this study produced a very large, and very rich, volume of data. By no means all of it has been tapped to deal with the research questions refined in earlier chapters. So, the policy recommendations will, in the main, be limited to the scope of the research questions. The desire to conduct the research arose from real practical concerns about the issue of quality of universities and, in particular, the quality of the teaching and learning dimension of a university's purpose. Thus, it was because of practical concerns that the research began and so it can only be properly concluded with a discussion of various practical issues based upon the research findings.

In the main, the recommendations are made to three important audiences — to the government and its higher education policy making agencies; to the higher education institutions themselves and to individuals, principally members of staff and students of the universities in Hong Kong. The recommendations do not classify easily since they often have implications for more than one of the audience categories mentioned above. The implications for each, if appropriate, will be dealt with in the discussion of each recommendation.

Policies for Quality in Higher Education

This study began with a concern about the issue of quality in higher education. After extensive consideration, it was concluded that there can be no single index of quality; that quality must be considered in terms of each of the functions of a university and, finally that there are many reasonable and acceptable definitions of quality. What matters then, for quality assurance, or quality assessment or quality measurement, is that each system or institution or individual must clearly define what quality means to them. Only then can it be measured or assessed. This work presents no empirical evidence that this should be so but after considerable review of the various literatures on the topic and thought, that is the conclusion that has been reached. So, for higher education policy makers and governments who are determined to ensure that quality is achieved, it is important to realise that fact and to build it into their policies. Instead of being concerned about an ill-defined single concept of quality, it should be recognised and built into the relevant systems, that quality is an individual concept, which may be singular only to the individual entity who or which defines it.

Although this view affects policy makers, since they are the ones principally who assess quality, it should also be borne in mind by institutions and individuals. In essence, neither students nor staff, nor even institutions should expect to have a definition of quality handed down to them. Instead they will have to take responsibility to define what they mean by quality and to be prepared to assess or assure or to be assessed against that definition. However, in essence, this is an empowering notion. The individual teacher or institution is able to take control of the quality agenda rather than have it imposed upon them. In that sense, it is expected that this view of quality, which would certainly be new to Hong Kong, would be broadly welcomed by the stakeholders in the process.

The Student Experience

The overwhelming conclusion from the multivariate analysis was that various types of interaction between students themselves, and, between students and staff, is strongly associated with desirable learning outcomes. For policy makers, there is not too much to be done except to promote this idea throughout the system and institutions. Perhaps, in addition, there may be funding implications.

For universities there are many things that can be done. Universities should examine teaching strategies and the curriculum to promote peer interaction. Within the classroom context the results of this research would suggest that an increase in student interactive learning activities, possibly at the expense of more traditional presentational strategies would have beneficial effects. In simplistic terms, teachers should use techniques which involve more discussion among students. This is hardly new. Almost thirty years ago McKeachie (1971) reported that:

*...student-centred discussions (are) more effective...
for goals of retention, application, problem solving,
attitude change and motivation for future learning.*

(McKeachie, 1971, p.7)

In Hong Kong, discussion among students is not a technique widely practised in secondary schools nor in universities. Students who enter university, therefore, do not do so with any experience or expectation of becoming involved in discursive learning activities (Tang and Morris, 1989). They certainly do not expect such activities to be beneficial to learning. Studies of distance learners in Hong Kong (The Open University

of Hong Kong, 1999) show that the overwhelming majority of students prefer tutorials to be lectures with a teacher presenting material rather than discussion sessions.

Obviously the usefulness of student interaction must be promoted at all levels of the education system including the secondary schools. Fortunately, government policy is being adapted to embrace some of these ideas:

Top priority

To promote the concept of life-wide learning experiences among educators and the society at large and to mobilise existing resources to provide room and support to learning activities beyond the confines of the classroom.

Education Commission (1999)

The expansion of teaching strategies to embrace more discursive activities is not the only implication in that regard which arises from this study. The number of essay-type examinations was a significant contributor to four of the explanatory models. It is not absolutely clear from the wording of the question whether it is the number of exams themselves which is the crucial issue or whether only examinations consisting mainly of essay-type questions is important. Only further research into that particular detailed question would be able to explain the matter fully. Nonetheless, it would be extremely plausible to conclude that Hong Kong students derive positive learning benefits from the effort associated with preparing for examinations. Research has demonstrated that students believe that learning is the result of effort and that the challenge of examinations which matter, encourages effort (Biggs, 1996; Hau and Salili, 1996).

Accordingly, university staff should consider increasing the number of essay-type examinations in their teaching strategies. Such a move would have a number of implications not the least of which would be for the time needed for a member of staff to grade and to provide feedback on, essay type examinations. The opportunity cost of this would be measured in terms of other teaching activities or research. In crude global terms, a move to more assessment based teaching strategies would result in an immediate call for an increase in staffing resources, across the universities.

In addition to curriculum reform and teaching strategies, the universities must also address the physical and recreational environment. If students are to embrace the discursive learning strategies found in this study to be advantageous, then an appropriate climate must be created where students can hold the meaningful discussions which clearly improve their learning. Then, first of all, they must have a place to do so. Because of the shortage and high price of land, recreational space seems to have been somewhat neglected in the design of the Hong Kong university campuses. This is the case even in the newly designed universities which have few places where students can sit and talk. A cursory observation of one of the new university campuses records student canteens that are seriously overcrowded, extremely noisy and where students are not encouraged to linger. Staff seldom, if ever, go there. Separate and exclusive arrangements are made for them. Those students who do 'hang out' on campus do so in empty classrooms but are frequently 'moved on' by ancillary staff.

There is further anecdotal evidence that even small changes can have a huge impact. At one new campus, having heard a presentation on the findings of this study, a Pro-Vice Chancellor immediately ordered a considerable number of comfortable seats and coffee

tables to be placed in the central 'mall' area of the main campus building. The effect was immediate. At any given time of the day, several hundred students arrange themselves in groups of seven or eight around these sofas and coffee tables. In the main, they are obviously talking about their work — papers are out and notes are being made. What once was a huge quiet space has been transformed into a lively venue. At a talk a few weeks later, the same Pro-Vice Chancellor claimed the installation of the furniture as his most significant contribution to learning since taking up the post.

As well as creating the physical environment to encourage discussion, universities could promote assessment strategies which encourage discussion among students. Group project based assessment, for example, would be such a strategy. These types of approaches are not popular in Hong Kong because of doubts about plagiarism and assessing the contribution of the individual student (Imrie, 1993).

However, this would have to be balanced against the obvious likely benefits of discussion and interaction amongst the group. Group assessment has always caused some controversy. Some recent studies (see, for example, Leijk, Wyvill and Farrow, 1999) have found evidence that group based grades do not reflect the ability of high and lower achievers. This may be one of the reasons why this strategy is not widely accepted in Hong Kong universities.

Student organisations must be excellent forums where students can interact with their peers. It should be recalled also that the Clubs and Organisations scale also made an impact in several of the models. This type of activity, therefore, must be given even greater encouragement. Universities could provide resources in terms of space, finance

and faculty involvement to promote the creation and operation of student societies. Consideration might be given to the creation and funding of more student sabbatical posts in the universities. Students' Affairs Offices in Hong Kong universities are comparatively large and well-resourced departments compared to their equivalents in some western higher education systems. These are the most likely operational units to provide leadership in creating the environment in which student associations might flourish positively and contribute to the creation of an improved learning environment. In order to bring this about, some changes in attitude of those officials who currently administer these offices will be required.

One other strategy might usefully be considered here. It was noted from some of the earlier discussions that some potentially beneficial student experiences are more widely practised if the students gain some course credit for participating. The particular example discussed was participation in a physical education course which was much more popular at those universities where credit can be gained. The same effect might be achieved with other desirable activities.

Before leaving the issue of discursive and interactive activities, consideration should be given to promoting informal interaction between staff and students. Improving the physical environment so that there are greater opportunities for social interaction will help. Staff who are tutors could be given a small amount of funds to entertain their tutees at the beginning of the semester, say. That may promote interaction between students in the group as well as with the member of staff. In addition, the teacher-student attitude discussed earlier will be difficult to break down unless the teacher takes the lead in breaking it down. Such small gestures may assist greatly with the process.

Nonetheless, the teacher-student Confucian role set is obviously a two-way phenomenon if both parties are steeped in such traditions. Some of the attitudes of the teachers may have to be changed in order to encourage the students to interact. That does not mean to say that the respect accorded to the teacher by the student must change adversely. There may be other forces at work, however. There can be little doubt that the UGC's policy of first of all, encouraging research then following that up with resource linked research assessment had an impact on the institutions and on the individual. Universities interpreted the policy shift, as one would expect them to do. Research was to be emphasised since institutional budgets were going to be linked to some form of research assessment by government.

That message was soon transmitted within institutions. Personnel decisions e.g. renewal of contract; substantiation; initial appointment and promotion were going to depend, primarily, on research output-measured mainly by publications and the dollar value of research grants. Very rapidly, individual staff members received the intended message that it would be their research records which would ensure that they were awarded 'an iron rice bowl'. Many staff saw the opportunity cost of teaching related activities as time not being spent on research. So these young staff, with career ambitions, soon began to believe that to succeed they must minimise their commitments with students. After all, as was clear in the institutions' policy and actual personnel record, one's contract did not depend on teaching but on research. In one university, a member of staff awarded a highly prestigious Teaching Excellence Award by the University (one of only four per year) and, reported widely in the media, had her contract terminated a month later because of a 'poor' publications record.

This was very much the climate in Hong Kong around the time that the survey reported in this work was conducted and may therefore have been atypical of the usual environment in terms of the opportunities for students to interact with staff. Government recognised quite quickly that their policy signals had skewed the system. A UGC Report (1996) implied that the signals about the concentration on research and excellence had been misinterpreted as placing a higher value on research as opposed to teaching. That was not what government wanted:

The Grants Committee believes that post-1998 quality assurance of teaching will become an even more important issue. ... Another reason is the increasing public concern that HEIs, which are funded by the taxpayer, should give good value for the very large investment in them. Few members of the public or their representatives in government would feel able to judge the quality of research, but most of them would believe themselves competent to distinguish between good and indifferent teaching.

(UGC, 1996, p. 108)

Even more recently, a major consultation document on education (Education Commission, 1999) does not even refer to research when dealing with higher education. It concentrates exclusively on teaching related issues. Thus, government can continue to reinforce the policy that ‘...the quality of teaching is just as important as research if not more so.’ Leung (1996, p. 1).

As would seem likely, this would have an effect on institutional policies, especially if institutional subventions were to be linked in some ways, to assessments of the quality of teaching. That may create an environment and culture where staff are motivated to

interact more with students as this study recommends. They may also be receptive to the staff and student development initiatives which will be discussed next.

Given existing policies — i.e. the situation in which career related motivating factors which discourage spending time on teaching related activities, in favour of research related activities predominate and institutional cultures which place greater prestige and value on research as opposed to teaching exist — it would not be surprising if staff were disillusioned about teaching and the promotion of learning among students. That is why many of these environmental factors will require to be changed in order that staff can be motivated to implement the recommendations discussed in this study.

Development of individuals

There are implications from this study for both staff and student development. In terms of staff development, the results of this study and the policy recommendations would usefully inform academic staff in a general sense. On the other hand, so might other issues arising from research into higher education issues. The difference with the results of this study, perhaps, is that it has been conducted in Hong Kong and, as such, is somewhat unique. There is anecdotal evidence to suggest that some academic staff at least dismiss the findings of higher education research conducted elsewhere in the world with the bold statement that things are different in Hong Kong. That is indeed so but there are understandings and strategies emerging from this study which are applicable here and this may strengthen the hand of university leaders and staff developers. The key elements to be discussed as part of any staff development programme, would be, it is suggested, as follows:

- a description of the higher education student experience in Hong Kong;
- the influence of the student experience on learning outcomes;
- recommended strategies to be adopted by individual teachers as a result of this research.

In staff development events, it would be extremely useful if participants could undertake their own reflection on the implications of the results of this study. Much of this data is new to lecturers in Hong Kong and, besides that, they will be in a better position to consider which strategies can best capitalise on the work as a whole.

In addition to the implications for staff development, it is suggested that there are implications for student development, in the general sense, as well, arising from this study. The relative passivity of the Hong Kong student in school as has been discussed above, is quite well documented. Hong Kong students emerging from the secondary school system, unprepared to be active and independent learners but who are spoon-fed, (Cheng, Lai, Lam, Leung and Tsoi, 1996) may be unaware that they learn by interacting with each other and engaging in the student experience. It would seem to be quite reasonable to assume that students may learn better if they know, first of all, how their learning comes about and, secondly, what strategies they can adopt to enhance the likelihood of favourable learning outcomes. This could be brought about in a number of ways. There could be formal study skills or 'learning how to learn' courses prescribed early in students' university life. Perhaps, more realistically, some preparatory pre-session courses might be arranged in the summer immediately before commencing the freshman year or study skills courses could be awarded credit as suggested above.

It is here that many of the conclusions of the student approaches to learning studies can be put to good use. Informing students about the findings of these studies in themselves would be beneficial but in addition, students can be taught some of the skills, which result in deep and achieving approaches. For that matter, university staff would benefit greatly from staff development grounded in the student approaches to learning literature also.

The objective must be to raise students' consciousness about their learning and introduce them to the student experience concepts discussed in this work. Mainstream study skills should not be neglected since those are encapsulated in the Course Learning scale, which was found to be influential in the explanatory models. These objectives can be pursued or reinforced in other ways. These do not have to come from 'learning to learn' courses exclusively at all. These ideas and skills can be dealt with 'across the curriculum', for example, although specialist subject teachers may not be willing to shoulder the additional burden that this would impose.

Other forms of learning or support might be considered such as self-learning materials (e.g. books, study guides and the internet). Alternatively, attempts could be made to address this problem among all the universities collectively since it is in the interest of all universities that it be addressed. It may be necessary for the government to take the initiative, as the universities in Hong Kong do not have a strong track record of co-operation.

The overriding conclusion of these policy recommendations is that all relevant agencies — policy makers; university leaders; staff and students must focus, particularly, on forms of engagement and study skills. Strategies and techniques should be developed to

encourage this. In this respect, the conclusions of the study are unequivocal and confirm many of the findings from North America. Students benefit from engagement, particularly with each other. In sum, all those involved in the higher education system or process in Hong Kong would do well to bear this in mind.

In strict paradigmatic terms the findings of this study cannot be generalised beyond the population from which the sample was taken i.e. full time undergraduate students in Hong Kong. For various reasons, Hong Kong students are quite distinctive from their counterparts in the west. Nonetheless they may have a number of similarities to students in other Confucian heritage cultures. The results of this study may be applicable there.

Many interesting findings were noted which would seem, on the face of it at least to be applicable generally, irrespective of the distinctive features of Hong Kong. It would be useful if those thought valuable could be further explored in different systems.

Recommendations for Future Research

The database from which the results of this study were drawn, is very large indeed. Many studies, additional to the one reported in this work, could usefully be carried out using the data. For example, many more detailed comparisons could be made about the effect of different universities in terms of perceptions of the university environment. Individual differences between universities was not a central focus of this work. An investigation into why there are differences between universities; the different student experience in each; and the relationship with learning outcomes, could be of some interest to researchers.

In this study, it was found that engagement, particularly that involving conversational interaction between students, was highly associated with learning outcomes. It would be extremely useful to find out more detailed information about this phenomenon. In particular, what types of conversation are having the greatest effect? Are students forming informal study groups, and, is this where the added value occurs and, if so, how? Capitalising upon the findings of this survey based research, some more qualitative data collection work could be undertaken using ethnographic techniques. A summary of the results of this work would be a very useful introduction to such a study.

There are indications from the results of the survey that time spent on course related activities may have some impact on students' learning outcomes. In one case there was an indication that the effect was negative i.e. that the more hours a student spent on course related activities — the fewer the gains in their learning outcomes (in this particular case, in general education). This finding is worthy of further investigation since if it is confirmed, and further details about the exact effect are ascertained, then it may have serious implications on the way curricula are designed and the teaching strategies adopted. This would be extremely useful and topical in Hong Kong at this time since there is pressure from the Heads of Universities (HUCOM) to persuade the government to revert to a standard four year full time first degree in order to allow the curriculum to become less crowded. If it could be shown that a crowded curriculum and too many study hours have a negative, or at least, mixed, effect, then that would be a major contribution to these discussions.

Interaction with staff members was found to be a positive factor in learning outcomes. Further investigation into this notion would be worthwhile. If members of staff were to use their time differently what effect would that have? For example, fewer hours spent in presenting material means that staff time would be released for alternative teaching strategies e.g. setting and marking more pieces of assessment and writing (which this study found to have positive benefits). Alternatively, more time could be spent interacting with students or promoting structured discussion. Most of these uses of staff time are more expensive but research could be undertaken to try to ascertain the cost-benefit. Alternative staffing models incorporating graduate students, say, to facilitate structured discussions or other forms of engagement could be looked at. Similarly, graduate students could undertake some assignment marking activities relatively easily and cheaply which may make it possible to improve the student experience and enhance learning outcomes cost-effectively.

All of these alternative strategies should be researched in terms of their cost and value. There is sufficient evidence from the study described in this work to justify further investigation as suggested here. The potential payback in terms of improved and enhanced learning outcomes is significant.

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Evaluation of the Student Experience Project

University Student Experiences Questionnaire

MARKING INSTRUCTIONS:

- Use pencil or black/blue ball pen to fill the oval completely.
e.g. Correct Wrong
- Erase all mistakes and make no stray marks.
- Do not staple this questionnaire.

The main purpose of this inquiry is to learn more about how students spend their time - in using facilities and opportunities that exist on the university campus.

The information obtained from you and from students at different universities would provide new insight to administrators, staff members, and others who provide the resources and shape the programs for student learning and development.

This questionnaire can be answered quite easily in 30 minutes. You will find, when you have finished it, that your answers provide a kind of self-portrait of what you have been giving and getting in your university experience.

Your background information would help us learn how activities might be related to age, sex, current year of study, major field, whether one lives on the campus, whether one has a job, etc.

The benefit from this survey depends on the thoughtful responses and willing participation of those who are asked to help. Your willingness to participate is important and very much appreciated.

BACKGROUND INFORMATION

Age

- 22 or younger
 23-27
 28 or older

Sex

- male
 female

Which university are you currently attending?

- The Chinese University of Hong Kong
 City University of Hong Kong
 Hong Kong Baptist University
 Hong Kong Polytechnic University
 The Hong Kong University of Science and Technology
 Lingnan College
 The University of Hong Kong

What year are you in currently?

- 1st year undergraduate
 2nd year undergraduate
 3rd year undergraduate
 other

Have you at any time while attending this university lived in a student hostel, or other university housing?

- Yes
 No

Where do you now live during the academic year?

- university student hostel
 share a room with a friend who has student housing most of the time
 private apartment or room within walking distance of the university campus
 apartment away from campus
 with my parents / relatives

At this university, up to now, what have most of your grades been?

- Excellent A
 Good B
 Pass/Satisfactory C/D
 Fail D/F

Which of the following comes closest to describing your major course of study? (please choose 1 answer only)

- art, design & performing arts
 biological sciences
 built environment
 business & management
 clinical medicine / dentistry
 education
 engineering
 humanities and languages
 IT & computing science
 law
 mathematics
 physics / chemistry
 social sciences
 subjects & professions allied to medicine & dentistry

Is this area of your study your first choice in priority?

- yes (please skip the next question)
 no

What was your first choice of major?

- art, design & performing arts
 biological sciences
 built environment
 business & management
 clinical medicine / dentistry
 education
 engineering
 humanities and languages
 IT & computing science
 law
 mathematics
 physics / chemistry
 social sciences
 subjects & professions allied to medicine & dentistry

Did either of your parents graduate from university?

- no
- yes, both parents
- yes, father only
- yes, mother only

After you graduate from university, do you expect to enroll for a more advanced degree?

- yes
- no

Have you at anytime while attending this university participated in any international exchange study programmes / overseas conferences?

- yes
- no

Are you a full-time or part-time student?

- full-time
- part-time

During the term time, about how many hours a week do you usually spend on course related activities? This includes time spent in class and time spent studying.

- about 50 hours a week or more
- about 40 hours a week
- about 30 hours a week
- about 20 hours a week
- less than 20 hours a week

During the term time, about how many hours a week (on an average) do you usually spend working on a job?

- none, I am not employed during the term time
- about 10 hours a week or less
- about 15 hours a week
- about 20 hours a week
- about 30 hours a week
- more than 30 hours a week

About how much of your university expenses this year is paid by your parents or family?

- all or nearly all
- more than half
- less than half
- none or very little

UNIVERSITY ACTIVITIES

DIRECTIONS: In your experience at the university during current academic year, about how often have you done each following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
Often
Occasionally
Never

Library Experiences

- Used the library as a quiet place to read or study materials you brought with you.
- Used the card catalogue or computer to find what materials there were on a topic.
- Asked the librarian for help in finding materials on a topic.
- Read something in the reserve reading room or reserve section.
- Used indexes / CD ROMs to find journal articles.
- Developed a bibliography or set of references for an assignment or other course projects.
- Found some interesting materials to read just by looking through the shelves.
- Looked for references that were cited in your readings.
- Gone back to read a basic reference or document that authors had often referred to.
- Checked out books to read (not textbooks).
- Used the non-print section.

Course Learning

- Took detailed notes in class.
- Participated in class discussions.
- Underlined major points in the readings.
- Tried to see how different facts and ideas fit together.
- Thought about practical applications of the material.
- Worked on a paper or project where you had to integrate ideas from various sources.
- Summarized major points and information in your readings or notes.
- Tried to explain the material to another student or friend.
- Made outlines from class notes or readings.
- Did additional readings on topics that were introduced but not discussed in class.
- Took notes in Chinese.
- Took notes in English.

UNIVERSITY ACTIVITIES

DIRECTIONS: In your experience at the university during the current academic year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

- Very often
- Often
- Occasionally
- Never

Experience with Lecturers

- Talked with a lecturer.
- Asked your lecturer for information related to a course you were taking (grades, make-up work, assignments, etc.).
- Visited informally and briefly with a lecturer after class.
- Made an appointment to meet with a lecturer in his / her office.
- Discussed ideas for an assignment or other class project with a lecturer.
- Discussed your career plans and ambitions with a lecturer.
- Asked your lecturer for comments and criticisms about your work.
- Had lunch / tea / coffee casually with a lecturer.
- Worked with a lecturer on a research project.
- Discussed personal problems or concerns with a lecturer.
- Talked with a teaching assistant / Lab instructor / demonstrator.

Athletic and Sports Facilities

- Used outdoor recreational spaces for casual and informal individual athletic activities.
- Used outdoor recreational spaces for casual and informal group sports.
- Used indoor sports facilities for individual activities (exercise, swimming, etc.).
- Used indoor sports facilities for playing sports that require more than one person.
- Set goals for your performance in a sport / game.
- Followed a regular schedule of exercise, or practice in some sport, on campus.
- Sought instruction to improve your performance in an athletic activity.
- Played on an intramural team (e.g. inter-departmental)
- Taken a P. E. course.
- Was a spectator at university sporting event.

- Very often
- Often
- Occasionally
- Never

Clubs and Organizations

- Read notices about campus events and student organizations.
- Attended an event organized by a student group.
- Read or asked about a club, organization, or student union activity.
- Attended a club, organization, or student union meeting.
- Voted in a student election.
- Discussed policies and issues related to campus activities and student union.
- Worked in a student organization or special project (publications, student union, social event, etc.).
- Discussed reasons for the success or lack of success of student club meetings, activities or events.
- Worked on a committee.
- Met with a member of the staff, lecturer or administrator to discuss the activities of a student organization.

Student Acquaintances

- Talked to / spent time with students whose academic major field was very different from yours.
- Talked to / spent time with students whose interests were very different from yours.
- Talked to / spent time with students whose family background (economic and social) was very different from yours.
- Talked to / spent time with students whose age was very different from yours.
- Talked to / spent time with students from another country or culture.
- Talked to / spent time with students from other universities.
- Had serious discussions with students whose philosophy of life or personal values were very different from yours.
- Had serious discussions with students whose religious beliefs were very different from yours.
- Had serious discussions with students whose political opinions were very different from yours.
- Had serious discussions with students from a country very different from yours.

UNIVERSITY ACTIVITIES

DIRECTIONS: In your experience at the university during the current academic year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
Often
Occasionally
Never

Experience in Writing

- Used a dictionary or thesaurus to look up the proper meaning of words.
- Consciously and systematically thought about grammar, sentence structure, paragraphs, word choice, and sequence of ideas or points as you were writing.
- Wrote a rough draft of a paper, essay or an assignment, and then revised it yourself before handing it in.
- Spent at least five hours or more writing a paper (not counting time spent in reading or at the library).
- Asked other people to read something you wrote to see if it was clear to them.
- Referred to a book or manual about style of writing, grammar, etc.
- Revised a paper or composition two or more times before you were satisfied with it.
- Asked a lecturer for advice and help to improve your writing.
- Made an appointment to talk with a lecturer who had marked a paper you had written.
- Submitted for publication an article, story, or other composition you had written.

Experience with Computers

- Took a course / workshop offered by the Computer Service Centre.
- Used a computer on university campus.
- Used a computer at home / hostel.
- Used a computer for word-processing purposes.
- Used a computer for communication purposes (e.g. e-mail).
- Used a computer for programming purposes.
- Used a computer for CAD / CAM.
- Used a computer for graphics.
- Used the Internet.
- Waited for a long time to use a computer on campus.

Very often
Often
Occasionally
Never

Personal Experiences

- Told a friend why you reacted to another person the way you did.
- Discussed with other students why some groups get along smoothly, and other groups don't.
- Sought a friend to help you with a personal problem.
- Attended a course on personal development/related topics.
- Identified with a character in a book or movie and wondered what you might have done under similar circumstances.
- Read articles or books about personal adjustment, self, or personality development.
- Completed a questionnaire / test to measure your abilities, interests, or attitudes.
- Asked a friend to tell you what he / she really thought about you.
- Been in a group where each person, including you, talked about his / her personal problems.
- Talked with a counsellor about problems of a personal nature.

General Scientific Knowledge

- Read articles (not assigned) about scientific theories and concepts.
- Tried to express a set of relationships in mathematical terms.
- Tested your understanding of some scientific principle by seeing if you could explain it to another student.
- Memorized formulas, definitions, technical terms.
- Practiced to improve your skill in using some laboratory equipment.
- Showed a classmate how to use a piece of scientific equipment.
- Attempted to explain an experimental procedure to a classmate.
- Went to an exhibit or demonstration of some new scientific device.
- Completed an experiment/project using scientific methods.
- Tried to explain to another person the scientific basis of your concerns about pollution, recycling, alternative sources of energy, acid rain, or similar aspects of the world around you.

UNIVERSITY ACTIVITIES

DIRECTIONS: If you are now living in a university student hostel, about how often have you done each of the following in that student hostel during the current academic year? Indicate your response by filling in one of the spaces to the left of each statement. If you do not live in a campus residence, omit these items and go to the next section.

- Very often
- Often
- Occasionally
- Never

Campus Residence

- Had lively conversations about various topics during dinner in the dining hall, snack bar, or cafeteria.
- Gone out with other students for late night snacks.
- Offered to help another student (with course work, favors, advice, etc.) who needed some assistance.
- Participated in discussions that lasted late into the night.
- Asked others for assistance in something you were doing.
- Borrowed things (clothes, records posters, books, etc.) from others in the student hostel.
- Attended social events organized by the student hostel.
- Studied with other students in the student hostel.
- Helped plan or organize an event in the student hostel.
- Worked on some community service or fund raising project with other students in the student hostel.
- Allow a non-hostel-resident student stay with you.

CONVERSATIONS

DIRECTIONS: In conversations with other students at this university during the current academic year, about how often have you done each of the following?

- Very often
- Often
- Occasionally
- Never

Information in Conversations

- Referred to knowledge you had acquired in your reading.
- Explored different ways of thinking about the topic.
- Referred to something a lecturer said about the topic.
- Subsequently read something that was related to the topic.
- Changed your opinion as a result of the knowledge or arguments presented by others.
- Persuaded others to change their minds as a result of the knowledge or arguments you cited.
- Used English at length.
- Used Putonghua at length.

In these conversations with other students, about how often have you talked about each of the following?

- Very often
- Often
- Occasionally
- Never

Topics of Conversation

- Current events in the news.
- Major social problems such as peace, human rights, equality, justice.
- Different life styles and customs.
- The ideas and views of other people such as writers, philosophers, historians.
- The arts - painting, theatrical productions, ballet, music, movies, etc.
- Science - environment, health, medicine, theories, experiments, methods, etc.
- Computers and the Internet.
- Social and ethical issues related to science and technology such as energy, pollution, chemical, genetics, military use.
- The economy - issues about employment, wealth, poverty, debt, trade, etc.
- International relations / politics.
- religion.
- courses learning.
- 1997 Hong Kong-China relations.
- University administration and policy.
- problems in studies.
- personal relationships.
- career / employment.

READING/WRITING

During the current academic year, about how many course books have you read? Fill in one space in each column.

			Textbooks or assigned course books
			Non-assigned course books
			other course readings
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	none
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	fewer than 5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	between 5 and 10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	between 11 and 20
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	more than 20

During the current academic year, about how many written reports have you made? Fill in one space in each column.

		Essay type exams in your courses
		Assignments or other written reports
<input type="radio"/>	<input type="radio"/>	none
<input type="radio"/>	<input type="radio"/>	fewer than 5
<input type="radio"/>	<input type="radio"/>	between 5 and 10
<input type="radio"/>	<input type="radio"/>	between 11 and 20
<input type="radio"/>	<input type="radio"/>	more than 20

ESTIMATE OF GAINS

DIRECTIONS: In thinking over your experiences in university up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement.

			Very much
			Quite a bit
			Some
			Very little
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gaining a broad general education about different fields of knowledge.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Developing your interest in intellectual inquiry.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ability to learn on your own, pursue ideas, and find information you need.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Developing an understanding and enjoyment of art, music, and drama.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Broadening your acquaintance and enjoyment of literature.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Becoming aware of different philosophies, cultures, and ways of life.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Seeing the importance of history for understanding the present as well as the past.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gaining knowledge about other parts of the world and other people - Europe, South East Asia, Africa, North America, etc.

			Very much
			Quite a bit
			Some
			Very little
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding the nature of science and experime
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding new scientific and technical developo
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Becoming aware of the consequences (benefits / ha dangers / values) of new applications in scien technology.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Developing good health habits and physical
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ability to think analytically, logically, and indepen
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Quantitative thinking - understanding probab proportions, etc.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ability to put ideas together, to see relation similarities, and differences between ideas.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Developing your own values and ethical stan
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Knowledge and awareness of different kin discriminations like i.e. racism, sexism etc.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding and being committed to fulfill yo duties as a citizen of Hong Kong.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Writing clearly and effectively.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Acquiring familiarity with the use of comput information technology.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	English ability.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Chinese ability.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding yourself - your abilities, interest personality.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understanding other people and the ability to ge with different kinds of people.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Presentation and communication skills.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ability to function as a team member.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ability to function as a leader.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gaining a range of information that may be relev career.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Acquiring background and specialization for education in some professional, scientific, or sc field.
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vocationally related training - acquiring knowle skills applicable to a specific job or type of work.

OPINIONS ABOUT UNIVERSITY

How well do you like university?

- I am enthusiastic about it.
- I like it.
- I am more or less neutral about it.
- I don't like it.

If you could start over again, would you go to the same university you are now attending?

- Yes, definitely
- Probably yes
- Probably no
- No, definitely

THE UNIVERSITY ENVIRONMENT

Universities differ from one another in the extent to which they emphasize or stress various aspects of students' development. Thinking about your own experience at this university, to what extent do you feel that each of the following is emphasized? The responses are numbered from 7 to 1, with the highest and lowest points described. Fill in the space of whichever number best indicates your impression on a seven-point rating scale.

	Strong emphasis						Weak emphasis
	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on the development of academic, scholarly, and intellectual qualities	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on the development of artistic, expressive, and creative qualities	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on being critical, evaluative, and analytical	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on the development of vocational and occupational competence	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on the personal relevance and practical values of your courses	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on developing language abilities	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on developing skills in information technology and computing	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Emphasis on providing good teaching	(7)	(6)	(5)	(4)	(3)	(2)	(1)

Think about the teaching you have received during your university experience how satisfied are you with these aspects of teaching on a seven-point scale.

	Very satisfied						Very dissatisfied
	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Teaching in general	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Workload	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Assessment	(7)	(6)	(5)	(4)	(3)	(2)	(1)
Course structure	(7)	(6)	(5)	(4)	(3)	(2)	(1)

The next three ratings refer to people / groups at the university. Again, thinking of your own experience, describe your perception on the seven-point scales?

	Friendly, Supportive, Sense of belonging							Competitive, Un- Sense of alie-
Students / student groups	(7)	(6)	(5)	(4)	(3)	(2)	(1)	
Teaching staff members	Approachable, Helpful Understanding, Encouraging	(7)	(6)	(5)	(4)	(3)	(2)	Remote, Discou- Unsympath
Administrative staff and offices	Helpful, Considerate, Flexible	(7)	(6)	(5)	(4)	(3)	(2)	Rigid, Impers Bound by regu

ADDITIONAL QUESTIONS (if any)

1. (A) (B) (C) (D) (E)
2. (A) (B) (C) (D) (E)
3. (A) (B) (C) (D) (E)
4. (A) (B) (C) (D) (E)
5. (A) (B) (C) (D) (E)
6. (A) (B) (C) (D) (E)
7. (A) (B) (C) (D) (E)
8. (A) (B) (C) (D) (E)
9. (A) (B) (C) (D) (E)
10. (A) (B) (C) (D) (E)
11. (A) (B) (C) (D) (E)
12. (A) (B) (C) (D) (E)
13. (A) (B) (C) (D) (E)
14. (A) (B) (C) (D) (E)
15. (A) (B) (C) (D) (E)

**THANK YOU
FOR YOUR PARTICIPATION**

This questionnaire is based on the "College Students Experience Questionnaire" (CSEQ), by C.Robert Pace. It was adapted for use in Hong Richard Armour and Cheng Wai Ning as part of the Evaluation of the Student Experience Project. Kind permission for the adaptation and use of t was given by the Center for Postsecondary Planning and Research, Indiana University

Table 2.1
Activities in which
a Majority of Hong Kong Students (50% or more) engage in frequently

	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Library Experiences									
Used library as a quiet place to read or study materials you brought	48	54	45	52	68	60	59	54	28
Used card catalogue or computer to find materials on a topic	61	59	62	67	67	56	58	61	48
Course Learning									
Took detailed notes in class	73	58	56	61	57	56	75	64	90
Participated in class discussions	44	54	50	56	31	56	52	50	65
Underlined major points in readings	81	80	79	78	78	78	81	80	68
Tried to see how different facts and ideas fit together	58	46	49	53	58	49	58	53	66
Worked on a paper or project that had to integrate ideas from various sources	57	55	59	61	41	60	53	55	65
Summarized major points and information in readings or notes	59	51	58	56	55	57	62	57	63
Took notes in English	80	82	68	79	80	65	91	80	N/A
Experience in Writing									
Used dictionary to look up meaning	72	69	67	71	63	73	71	70	70
Thought about grammar when writing	66	60	59	60	53	62	65	61	77
Wrote a draft of a paper and revised it before handing it	65	63	67	64	53	67	64	64	78
Spent at least 5 hrs or more writing paper	59	52	53	47	40	49	50	51	62
Experience with Computers									
Used computer on university campus	79	68	75	75	89	62	65	73	N/A
Used computer at home/hostel	67	83	71	79	79	64	73	75	N/A
Used computer for word-processing	80	89	81	86	83	74	83	83	N/A
Used computer for communication	62	54	43	48	83	37	58	56	N/A

Table 2.2
Library Experience

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Library Experiences									
Used library as a quiet place to read or study materials you brought	48	54	45	52	68	60	59	54	28
Used card catalogue or computer to find materials on a topic	61	59	62	67	67	56	58	61	48
Asked librarian for help in finding materials on a topic	8	6	10	12	7	13	5	8	25
Read something in reserve reading room or reference section	37	31	26	31	51	28	32	34	21
Used indexes/CD ROMs to find journal articles	24	15	28	29	15	23	15	21	27
Developed bibliography or references for assignment or course projects	26	29	43	35	17	30	30	30	41
Found interesting materials to read by looking through shelves	19	22	25	24	21	34	20	22	17
Looked for references cited in your readings	40	40	35	42	35	40	48	41	15
Gone back to read basic reference or document that other authors had often referred to	12	19	19	20	14	20	14	17	8.0
Checked out books to read (not textbooks)	28	29	33	32	32	34	27	30	19
Used non-print section	12	22	14	19	15	15	6	15	N/A

Table 2.3
Course Learning

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Course Learning									
Took detailed notes in class	73	58	56	61	57	56	75	64	90
Participated in class discussions	44	54	50	56	31	56	52	50	65
Underlined major points in readings	81	80	79	78	78	78	81	80	68
Tried to see how different facts and ideas fit together	58	46	49	53	58	49	58	53	66
Thought about practical applications of material	51	45	47	53	45	41	53	49	65
Worked on a paper of a project that had to integrate ideas from various sources	57	55	59	61	41	60	53	55	65
Summarized major points and information in readings or notes	59	51	58	56	55	57	62	57	63
Tried explain material to other student or friend	39	35	42	42	40	36	39	39	62
Made outlines from class notes or readings	27	27	33	34	33	33	30	31	39
Did additional readings on topics that were introduced and discussed in class	21	22	21	25	22	28	27	24	19
Took notes in Chinese	30	20	36	23	13	42	9	23	N/A
Took notes in English	80	82	68	79	80	65	91	80	N/A

Table 2.4
Experiences with lecturers

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Experiences with Lecturers									
Talked with lecturer	24	23	29	26	24	34	21	25	63
Asked lecturer for information related to course that were taking	27	28	34	32	29	38	19	28	54
Visited informally lecturer after class	12	12	19	14	15	18	9	13	38
Made appointment to meet lecturer in his office	9	10	17	14	10	21	6	11	28
Discussed ideas for assignment or other class project with lecturer	17	21	25	24	14	31	11	19	26
Discussed career plans and ambitions with lecturer	4	4	7	6	6	6	3	5	24
Asked lecturer for comments and criticisms about your work	11	12	18	17	9	25	7	13	23
Had lunch/tea/coffee casually with lecturer	2	2	8	5	3	5	1	3	6
Worked with lecturer on research project	5	9	12	7	8	12	3	7	5
Discussed personal problems or concerns with lecturer	2	2	7	4	3	6	1	3	8
Talked with TA/Lab instructor/Demonstrator	33	22	15	20	37	11	34	26	N/A

Table 2.5
Athletic and Sports Facilities

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Athletic and Sports Facilities									
Used outdoor recreational spaces for casual and informal individual athletic activities	19	19	29	29	30	21	18	23	26
Used outdoor recreational spaces for casual and informal group sports	19	19	25	28	28	20	20	22	23
Used indoor sports facilities for individual activities	18	32	31	33	33	20	21	27	30
Used indoor sports facilities for sports require more than one person	22	38	32	40	32	26	21	31	24
Set goals for performance in sport/game	12	14	19	16	15	18	14	15	42
Followed regular schedule of exercise, or practice in some sport, on campus	12	13	18	15	17	17	13	14	33
Sought instruction to improve performance in athletic activity	7	9	16	14	13	13	8	11	16
Played on intramural team	7	7	15	10	11	11	10	9	22
Taken PE course	35	17	50	20	11	24	8	23	N/A
Spectator at university sporting event	6	6	13	8	7	12	8	8	35

Table 2.6
Clubs and Organizations

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Clubs & Organizations									
Read notices about campus events and student organisations	61	35	42	32	47	50	50	45	37
Attended event organised by student group	29	18	29	19	20	24	27	23	34
Read or asked about club, organization, or student union activity	28	18	25	18	21	22	27	22	34
Attended club, organization, or student union meeting	30	18	30	19	23	21	25	23	30
Voted in student election	42	31	30	33	29	37	34	34	24
Discussed policies and issues related to campus activities and student union	11	8	15	11	11	17	10	11	18
Worked in student organization or special project	26	16	25	17	20	23	22	21	20
Discussed reasons for success or lack of success of student club meetings, activities	18	10	20	13	13	15	16	15	18
Worked on committee	31	18	32	17	21	27	25	24	18
Met member to discuss activities of student organization	7	6	14	7	10	12	6	8	12

Table 2.7
Student Acquaintances

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Student Acquaintances									
Talked to students with different academic major field	47	26	30	24	35	31	41	34	65
Talked to students with different interests	38	28	35	28	32	32	38	33	56
Talked to students with different family background	48	37	41	35	38	38	51	42	59
Talked to students with different age	22	26	28	28	23	31	28	26	59
Talked to students from other country	10	9	11	11	12	14	12	11	28
Talked to students from other universities	39	43	45	39	43	41	40	41	N/A
Had serious discussions with students having different personal values	22	19	27	22	21	26	22	22	39
Had serious discussions with students having different religious beliefs	20	17	26	20	22	24	21	21	37
Had serious discussions with students having different political opinions	8	10	15	12	11	15	8	11	37
Had serious discussions with students from different country	6	8	13	9	8	13	8	9	21

Table 2.8
Experience in Writing

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Experience in Writing									
Used dictionary to look up meaning	72	69	67	71	63	73	71	70	70
Thought about grammar when writing	66	60	59	60	53	62	65	61	77
Wrote a draft of a paper and revised it before handing it	65	63	67	64	53	67	64	64	78
Spent at least 5 hrs or more writing paper	59	52	53	47	40	49	50	51	62
Asked other to read things you wrote to see if it was clear	22	27	33	28	23	36	15	25	60
Referred to book about style of writing	19	27	29	26	22	33	19	24	50
Revised paper two or more times before satisfied	42	43	44	40	38	49	36	41	49
Asked lecturer for advice to improve writing	9	15	17	17	12	27	6	13	31
Made appointment who talk to lecturer who marked your paper	8	9	15	13	9	19	3	10	20
Submitted for publication an article you had written	4	9	12	10	9	15	4	8	8

Table 2.9
Experience with Computers

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Experience with Computers									
Took course offered by Computer Service Centre	9	14	36	25	22	21	7	17	N/A
Used computer on university campus	79	68	75	75	89	62	65	73	N/A
Used computer at home/hostel	67	83	71	79	79	64	73	75	N/A
Used computer for word-processing	80	89	81	86	83	74	83	83	N/A
Used computer for communication	62	54	43	48	83	37	58	56	N/A
Used computer for programming	22	37	25	35	55	19	26	31	N/A
Used computer for CAD/CAM	8	13	13	19	29	10	11	14	N/A
Used computer for graphics	21	26	36	37	36	20	19	27	N/A
Used Internet	46	30	29	44	62	31	35	40	N/A
Waited long time to use computer on campus	48	37	68	54	62	36	31	46	N/A

Table 2.10
Personal Experiences

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Personal Experiences									
Told friend why you reacted to another person	52	41	50	43	37	48	47	46	63
Discussed with other students why some groups get along smoothly, and others don't	39	34	40	37	31	35	33	36	49
Sought friend to help with personal problem	47	39	47	44	37	50	46	44	55
Attended course on personal related topics	10	11	18	14	13	17	6	12	28
Identified character in a book and thinking what you would do under same condition	27	25	32	23	24	33	26	26	45
Read articles about personal adjustment	20	19	27	23	22	24	16	21	27
Completed questionnaire to measure abilities	24	24	32	25	20	28	23	25	24
Asked friend what he thought about you	28	29	39	32	26	35	27	30	30
Been in a group that each person talked ones personal problems	27	26	34	27	20	33	28	27	28
Talked with counsellor about problems of personal nature	4	7	14	9	8	13	4	7	10

Table 2.11
General Scientific Knowledge

	% reporting frequent engagement								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
General Scientific Knowledge									
Read articles about scientific theories	20	22	16	24	28	18	22	22	15
Tried expressing a set of relationships in mathematical terms	19	15	16	22	29	17	23	20	37
Tested understanding of scientific principle by explaining it to other	16	16	16	21	27	15	18	18	30
Memorized formulas, definitions, technical terms	46	38	30	42	62	27	54	44	55
Practised to improve skill in using lab equipment	21	23	22	25	38	18	22	24	16
Showed a classmate how to use scientific equipment	13	13	14	18	24	11	13	15	16
Attempted to explain an experimental procedure to classmate	13	13	16	19	26	13	14	16	17
Went to demonstration of a new scientific device	5	10	12	16	15	11	7	10	6
Completed a project using scientific methods	24	20	19	23	41	14	25	24	20
Tried to explain to others, the scientific basis for concerns about aspects of the world	9	12	16	15	22	13	13	13	17

Table 2.12
Estimate of Gains

	<i>%age answering 'Quite a bit' and 'Very much'</i>								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Gaining broad general education about different fields of knowledge	53	41	48	45	51	54	48	48	61
Developing interest in intellectual inquiry	49	36	46	44	48	43	52	45	48
Ability to learn on your own, pursue ideas, & find information you need	72	53	57	58	61	59	74	63	71
Developing understanding and enjoyment of art, music and drama	22	21	34	25	20	24	17	23	28
Broadening acquaintance and enjoyment of literature	24	21	30	24	23	31	21	24	30
Becoming aware of different philosophies, cultures and ways of life	41	26	37	32	30	36	33	33	48
Seeing the importance of history for understanding the present and past	25	19	27	22	23	33	19	23	47
Gaining knowledge about other parts of world and other people	22	19	25	22	20	31	18	22	32
Understanding nature of science and experimentation	35	28	21	30	57	18	42	34	31
Understanding new scientific and technical developments	36	30	23	32	63	17	37	34	27
Becoming aware of consequences of new applications in science and technology	32	27	25	29	49	22	35	31	30
Developing good health habits and physical fitness	25	24	25	27	28	27	26	26	53
Ability to think analytically	64	54	55	56	57	52	67	59	59
Quantitative thinking	45	40	38	42	48	42	48	43	43
Ability put ideas together, to see relationship, similarities, and differences between ideas	61	48	50	51	51	50	63	54	64
Developing your own values and ethical standards	58	43	50	46	42	47	55	49	61
Knowledge and awareness of different kinds of discriminations	41	34	43	33	31	45	39	37	N/A

....to be continued

Table 2.12
Estimate of Gains
(continued)

	<i>%age answering 'Quite a bit' and 'Very much'</i>								
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall	US
Understanding and being committed to fulfil civic duties as a citizen of HK	25	28	31	25	26	32	26	27	N/A
Writing clearly and effectively	42	42	43	40	39	41	43	42	60
Acquiring familiarity with using computers and information technology	63	58	54	58	68	46	58	59	54
English ability	33	45	31	43	48	42	47	42	N/A
Chinese ability	24	25	32	28	23	40	17	25	N/A
Understanding yourself	58	46	56	48	47	51	55	52	71
Understanding other people and the ability to get along with different people	58	47	53	51	43	47	61	52	70
Presentation and communication skills	56	56	55	60	51	58	62	57	N/A
Ability to function as team member	52	49	47	50	42	43	53	49	61
Ability to function as leader	31	35	36	35	29	35	35	34	N/A
Gaining range of information that may be relevant to a career	46	40	41	43	43	35	50	43	61
Acquiring background and specialization for further education	34	31	32	34	44	26	38	34	55
Vocationally related training	29	31	32	36	37	29	35	33	47

Table 2.13
Perceptions of University Environment

Score in the 7 point scale (ranking)

Emphasis on:	Overall	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	US
Development of academic, scholarly, and intellectual qualities	5.13 (1)	5.57 (1)	4.81 (1)	4.87 (1)	4.79 (4)	5.68 (1)	4.97 (2)	5.24 (1)	5.29 (1)
Development of artistic expressive and creative qualities	4.35 (8)	4.52 (8)	4.26 (8)	4.34 (8)	4.48 (6)	4.01 (8)	4.69 (5)	4.17 (7)	4.72 (5)
Being critical, evaluative, and analytical	4.93 (2)	5.16 (2)	4.71 (3)	4.67 (2)	4.85 (2)	4.70 (4)	5.06 (1)	5.19 (2)	4.99 (2)
Development of vocational and occupational competence	4.63 (4)	4.54 (7)	4.69 (4)	4.35 (6)	4.91 (1)	4.47 (5)	4.57 (7)	4.61 (3)	4.74 (4)
Personal relevance and practical values of your courses	4.61 (5)	4.69 (4)	4.53 (5)	4.53 (4)	4.76 (5)	4.42 (6)	4.72 (4)	4.54 (4)	4.86 (3)
Developing language abilities	4.50 (6)	4.63 (6)	4.41 (7)	4.60 (3)	4.40 (7)	4.32 (7)	4.81 (3)	4.50 (5)	N/A
Developing skills in information technology and computing	4.72 (3)	4.86 (3)	4.77 (2)	4.39 (5)	4.80 (3)	5.52 (2)	4.45 (8)	4.26 (6)	N/A
Providing good teaching	4.43 (7)	4.56 (5)	4.42 (6)	4.35 (6)	4.35 (8)	4.75 (3)	4.62 (6)	4.14 (8)	N/A

Table 2.14
Information in Conversations

	% saying often and very often							
	CUHK	CityU	HKBU	PolyU	HKUS	LC	HKU	Overall
	T							
Referred to knowledge you had acquired in reading	48	41	40	39	42	38	53	44
Explored different ways of thinking about the topic	41	38	38	41	38	39	40	39
Referred to something lecturer said about the topic	44	43	41	42	41	38	48	43
Subsequently read something related to the topics	33	37	35	38	35	36	35	36
Changed opinion because of knowledge presented by others	27	33	35	35	34	35	30	32
Persuaded others change their minds because of knowledge you cited	31	28	36	33	26	37	31	33
Used English at length	21	15	31	32	16	24	26	27
Used Putonghua at length	11		16	18		14	14	15

Table 2.15
Topics of Conversation

	% saying often and very often							
	CUHK	CityU	HKBU	PolyU	HKUST	LC	HKU	Overall
Current events in news	36	36	39	39	32	40	38	37
Major social problems	18	21	27	22	18	25	17	21
Different life styles	44	37	43	40	33	41	41	40
Ideas of other people	13	14	18	16	15	17	11	14
Arts	35	30	35	36	28	32	30	32
Science	25	23	19	27	34	17	29	26
Computers and Internet	40	38	32	44	60	33	37	41
Social and ethical issues related to science and technology	15	17	19	19	23	20	17	18
Economy	26	24	30	25	24	34	25	26
International relations/politics	11	15	19	15	16	17	12	14
Religion	20	17	25	18	20	33	19	19
Courses learning	73	60	56	62	67	20	70	65
1997 HK-China relations	22	25	30	28	24	34	21	25
University administration and policy	34	24	31	27	38	17	24	29
Problems in studies	73	62	64	66	67	18	73	67
Personal relationships	60	48	54	51	45	54	58	53
Career/Employment	59	47	47	51	53	33	59	53

CSEQ Feedback questions:

1. How long did it take you to complete the questionnaire?
2. Did you find the CSEQ content relevant to your experience in university? What are the most relevant sections and what are the least relevant sections? Why?
3. Was the English language of the questionnaire a difficulty to you?
4. Would it make any difference to you if the questionnaire was in Chinese?
5. Was the length of the questionnaire a problem for you?
6. Were there sections that seemed to be more difficult for you to get through?
7. Do you think students in general would be interested to know the results of this questionnaire?
8. Do you think students in general would be willing to fill out this questionnaire? Why / Why not?
9. Can you suggest any methods we could use to encourage students to complete it?
10. Do you think that filling out the questionnaire helps you reflect on your experience in university ?
11. On the questionnaire, circle any difficult vocabulary words, and mark unclear sentences (U), and sections that you find irrelevant (IR).

大學教育資助委員會

香港皇后大道中

和記大廈二樓二〇二室



UNIVERSITY GRANTS COMMITTEE

Suite 202, 2/F, Hutchison House,

10 Harcourt Road, Hong Kong.

Please quote our ref. in your reply.

UGC/FIN/74/92 V

本署編號 OUR REF.:

來函編號 YOUR REF.:

電話 TELEPHONE:

2524 1795

23 January 1996

電報掛號 TELEGRAPHIC ADDRESS:

'UGRANTS HONG KONG'

傳真機號碼 FAXLINE NO.: 2845 1596

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Similar letters to :

Professor Patrick Y C Cheng, CBE, JP,
Vice-Chancellor,
City University of Hong Kong,
Tat Chee Avenue,
Kowloon Tong,
Hong Kong.

P&VC, HKBU
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Dear Vice-Chancellor,

Evaluation of the Student Experience Project

I am writing to ask for your assistance and co-operation.

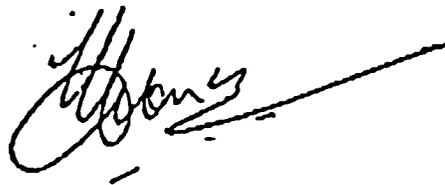
2. The UGC supported the captioned project with a \$10m grant from its Central Allocation Vote. All seven UGC-funded institutions are involved in the project and are represented on its Management Committee. As part of the project's ongoing work, a survey of 7,000 full-time undergraduate students in Hong Kong is to be conducted to find out more about the student experience of higher education. We hope that you will feel able to lend some assistance with the conduct of this large scale endeavour.
3. The UGC Chairman has expressed a personal interest in this survey which he hopes will allow both institutions and government to learn more about students thereby allowing us to improve our higher education provision.
4. The Project Director, Mr Richard Armour, will be writing to you in due course asking you to nominate someone to act as the liaison person in your institution. That individual will be asked to help with the arrangements for distribution and collection of questionnaires.

5. I enclose a short briefing note which explains more about the overall project and this particular survey.

6. The UGC believes that the results of this survey will prove to be of great interest. I should therefore be grateful if you could co-operate fully with the project team and afford them every reasonable facility.

7. Thank you for your help.

Yours sincerely,



(N J French)
Secretary-General
University Grants Committee

Encl.

cc Mr Richard Armour, CityU

1-sep

Estimates of Gains Factors

Factor Number	Factor	Factor Loading	Three items in each factor with the highest loadings
1	General Knowledge	0.72389	Broadening your acquaintance and enjoyment of literature
		0.69815	Seeing the importance of history for understanding the present as well as the past
		0.69993	Developing an understanding and enjoyment of art, music and drama
2	Cognitive and intellectual development	0.69081	Ability to learn on your own, pursue ideas, find information you need
		0.62227	Developing your interest in intellectual enquiry
		0.58254	Ability to think logically, analytically and independently
3	Personal/Social Development	0.80025	Ability to function as a team member
		0.72675	Ability to function as a leader
		0.63467	Understanding other people and the ability to get along with different kinds of people
4.	Scientific and technical knowledge	0.88405	Understanding new scientific and technical developments
		0.86267	Understanding the nature of science and experiments
		0.82578	Becoming aware of the consequences of new applications in science and technology
5	Civic and moral development	0.67042	Developing your own values and ethical standards
		0.66106	Knowledge and awareness of different kinds of discriminations like racism, sexism ...etc.
		0.57680	Understanding and being committed to fulfil your civic duties as a citizen of Hong Kong
6	Vocational and career development	0.72927	Gaining a range of information that may be relevant to a career
		0.76545	Vocationally related training-acquiring knowledge and skills applicable to a specific job or type of work
		0.76058	Acquiring background knowledge and specialization for further education in some scientific, professional or scholarly field
7	Language and communication	0.75674	English ability
		0.71752	Writing clearly and effectively
		0.58318	Chinese ability

COLLEGE STUDENT EXPERIENCES

The main purpose of this inquiry is to learn more about how students spend their time — in course work, in the library, in contacts with faculty, in extracurricular activities, in various social and cultural activities, and in using other facilities and opportunities that exist on the college campus.

The information obtained from you and from other students at many different colleges and universities should provide new insight to administrators, faculty members, and others who provide the resources and shape the programs that are meant to be of benefit for student learning and development within the college experience.

At first glance you may think it will take a long time to fill out this questionnaire, but you will find that it can be answered quite easily, that you can do it in less than an hour and perhaps only 30 to 45 minutes. You will find, too, when you have finished it, that your answers provide a kind of self-portrait of what you have been giving and getting in your college experience.

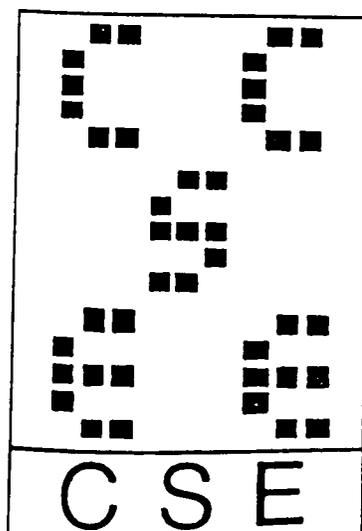
The benefit from this or any other survey depends on the thoughtful responses and willing participation of those who are asked to help. Your willingness to participate is important and very much appreciated.

We do not ask you to write your name in this questionnaire; but we do need to know where the reports come from, and that is why each questionnaire has a number on the back page—certain blocks of numbers tell us that those questionnaires have come from your college.

And, as you will see on the next page, we need to know a few things about you and where you come from, so that we can learn how activities might be related to age, sex, year in college, major field, whether one lives on the campus, whether one has a job, etc.

The questionnaire responses will be read by an electronic scanning device. Please use a #2 black lead pencil. Be careful in marking your responses. Do not write or make any marks on the questionnaire outside the spaces provided for your answers.

QUESTIONNAIRE



This questionnaire is available through the Center for the Study of Evaluation, UCLA Graduate School of Education, 405 Hilgard Ave., Los Angeles, CA 90024. It is intended for use by any college or university that wishes to have an inventory of the campus experiences of its students.

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Revised Third Edition 1990

BACKGROUND INFORMATION

DIRECTIONS: Indicate your response by filling in the appropriate space under each question.

Age

- 22 or younger
 23-27
 28 or older

Sex

- male
 female

Are you single or married?

- single
 married

What is your classification in college?

- freshman
 sophomore
 junior
 senior
 graduate student

Did you enter college here or did you transfer here from another college?

- entered here
 transferred from another college

Have you at any time while attending this college lived in a college dormitory, fraternity or sorority house, or other college housing?

- yes
 no

Where do you now live during the school year?

- dormitory or other college housing
 fraternity or sorority house
 private apartment or room within walking distance of the college
 house, apartment, etc. away from the campus
 with my parents or relatives

At this college, up to now, what have most of your grades been?

- A
 A-, B+
 B
 B-, C+
 C, C-, or lower

Which of the following comes closest to describing your major field of study (or your expected major)?

- Agriculture
 Arts (art, music, theater, etc.)
 Biological Sciences (biology, biochemistry, botany, zoology, etc.)
 Business
 Computer Science
 Education
 Engineering
 Health related fields (nursing, physical therapy, health technology, etc.)
 Humanities (literature, history, philosophy, religion, etc.)
 Physical Sciences (physics, chemistry, mathematics, astronomy, earth science, etc.)
 Social Sciences (economics, political science, psychology, sociology, etc.)
 Foreign Languages (French, Spanish, etc.)
 Area Studies (Latin American Studies, Russian Studies, Asian Studies, African Studies, etc.)
 Interdepartmental majors (international relations, ecology, women's studies, etc.)
 Other: What?

- Undecided

Did either of your parents graduate from college?

- no
 yes, both parents
 yes, father only
 yes, mother only

When, or if, you graduate from college, do you expect to enroll for a more advanced degree?

- yes
 no

Are you going to school full-time or part-time?

- full-time
 part-time

During the time school is in session, about how many hours a week do you usually spend on activities that are related to your school work? This includes time spent in class and time spent studying.

- about 50 hours a week or more
- about 40 hours a week
- about 30 hours a week
- about 20 hours a week
- less than 20 hours a week

During the time school is in session, about how many hours a week do you usually spend working on a job?

- none. I am not employed during the school year.
- about 10 hours or less
- about 15 hours
- about 20 hours
- about 30 hours
- more than 30 hours

About how much of your college expenses this year are provided by your parents or family?

- all or nearly all
- more than half
- less than half
- none or very little

What is your racial or ethnic identification?

- American Indian
- Asian or Pacific Islander
- Black, African American
- Hispanic, Latino
- White
- Other: What? ↘

COLLEGE ACTIVITIES

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
 Often
 Occasionally
 Never

Library Experiences

- Used the library as a quiet place to read or study materials you brought with you.
- Used the card catalogue or computer to find what materials there were on some topic.
- Asked the librarian for help in finding material on some topic.
- Read something in the reserve book room or reference section.
- Used indexes (such as the Reader's Guide to Periodical Literature) to journal articles.
- Developed a bibliography or set of references for use in a term paper or other report.
- Found some interesting material to read just by browsing in the stacks.
- Ran down leads, looked for further references that were cited in things you read.
- Gone back to read a basic reference or document that other authors had often referred to.
- Checked out books to read (not textbooks).

Very often
 Often
 Occasionally
 Never

Experiences with Faculty

- Talked with a faculty member.
- Asked your instructor for information related to a course you were taking (grades, make-up work, assignments, etc.).
- Visited informally and briefly with an instructor after class.
- Made an appointment to meet with a faculty member in his/her office.
- Discussed ideas for a term paper or other class project with a faculty member.
- Discussed your career plans and ambitions with a faculty member.
- Asked your instructor for comments and criticisms about your work.
- Had coffee, cokes, or snacks with a faculty member.
- Worked with a faculty member on a research project.
- Discussed personal problems or concerns with a faculty member.



DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
Often
Occasionally
Never

Course Learning

- Took detailed notes in class.
- Participated in class discussions.
- Underlined major points in the readings.
- Tried to see how different facts and ideas fit together.
- Thought about practical applications of the material.
- Worked on a paper or project where you had to integrate ideas from various sources.
- Summarized major points and information in your readings or notes.
- Tried to explain the material to another student or friend.
- Made outlines from class notes or readings.
- Did additional readings on topics that were introduced and discussed in class.

Very often
Often
Occasionally
Never

Art, Music, Theater

- Talked about art (painting, sculpture, architecture, artists, etc.) with other students at the college.
- Gone to an art gallery or art exhibit on the campus.
- Read or discussed the opinions of art critics.
- Participated in some art activity (painting, pottery, weaving, drawing, etc.).
- Talked about music (classical, popular, musicians, etc.) with other students at the college.
- Attended a concert or other music event at the college.
- Read or discussed the opinions of music critics.
- Participated in some music activity (orchestra, chorus, etc.).
- Talked about the theater (plays, musicals, dance, etc.) with other students at the college.
- Seen a play, ballet, or other theater performance at the college.
- Read or discussed the opinions of drama critics.
- Participated in or worked on some theatrical production (acted, danced, worked on scenery, etc.).

Very often
Often
Occasionally
Never

Student Union

- Had meals, snacks, etc. at the student union or student center.
- Looked at the bulletin board for notices about campus events.
- Met your friends at the student union or student center.
- Sat around in the union or center talking with other students about your classes and other college activities.
- Used the lounge(s) to relax or study by yourself.
- Seen a film or other event at the student union or center.
- Attended a social event in the student union or center.
- Heard a speaker at the student union or center.
- Played games that were available in the student union or center (ping-pong, cards, pool, pinball, etc.).
- Used the lounge(s) or meeting rooms to meet with a group of students for a discussion.

Very often
Often
Occasionally
Never

Athletic and Recreation Facilities

- Set goals for your performance in some skill.
- Followed a regular schedule of exercise, or practice in some sport, on campus.
- Used outdoor recreational spaces for casual and informal individual athletic activities.
- Used outdoor recreational spaces for casual and informal group sports.
- Used facilities in the gym for individual activities (exercise, swimming, etc.).
- Used facilities in the gym for playing sports that require more than one person.
- Sought instruction to improve your performance in some athletic activity.
- Played on an intramural team.
- Kept a chart or record of your progress in some skill or athletic activity.
- Was a spectator at college athletic events.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following? Indicate your response by filling in one of the spaces to the left of each statement.

Very often
Often
Occasionally
Never

Clubs and Organizations

- Looked in the student newspaper for notices about campus events and student organizations.
- Attended a program or event put on by a student group.
- Read or asked about a club, organization, or student government activity.
- Attended a meeting of a club, organization, or student government group.
- Voted in a student election.
- Discussed policies and issues related to campus activities and student government.
- Worked in some student organization or special project (publications, student government, social event, etc.).
- Discussed reasons for the success or lack of success of student club meetings, activities, or events.
- Worked on a committee.
- Met with a faculty adviser or administrator to discuss the activities of a student organization.

Very often
Often
Occasionally
Never

Experience in Writing

- Used a dictionary or thesaurus to look up the proper meaning of words.
- Consciously and systematically thought about grammar, sentence structure, paragraphs, word choice, and sequence of ideas or points as you were writing.
- Wrote a rough draft of a paper or essay and then revised it yourself before handing it in.
- Spent at least five hours or more writing a paper (not counting time spent in reading or at the library).
- Asked other people to read something you wrote to see if it was clear to them.
- Referred to a book or manual about style of writing, grammar, etc.
- Revised a paper or composition two or more times before you were satisfied with it.
- Asked an instructor for advice and help to improve your writing.
- Made an appointment to talk with an instructor who had criticized a paper you had written.
- Submitted for publication an article, story, or other composition you had written.

Very often
Often
Occasionally
Never

Personal Experiences

- Told a friend why you reacted to another person the way you did.
- Discussed with other students why some groups get along smoothly, and other groups don't.
- Sought out a friend to help you with a personal problem.
- Elected a course that dealt with understanding personal and social behavior.
- Identified with a character in a book or movie and wondered what you might have done under similar circumstances.
- Read articles or books about personal adjustment and personality development.
- Taken a test to measure your abilities, interests or attitudes.
- Asked a friend to tell you what he/she really thought about you.
- Been in a group where each person, including yourself, talked about his/her personal problems.
- Talked with a counselor or other specialist about problems of a personal nature.

Very often
Often
Occasionally
Never

Student Acquaintances

- Made friends with students whose academic major field was very different from yours.
- Made friends with students whose interests were very different from yours.
- Made friends with students whose family background (economic and social) was very different from yours.
- Made friends with students whose age was very different from yours.
- Made friends with students whose race was different from yours.
- Made friends with students from another country.
- Had serious discussions with students whose philosophy of life or personal values were very different from yours.
- Had serious discussions with students whose religious beliefs were very different from yours.
- Had serious discussions with students whose political opinions were very different from yours.
- Had serious discussions with students from a country different from yours.

DIRECTIONS: In your experience at this college during the current school year, about how often have you done each of the following?

Very often
Often
Occasionally
Never

Science

- Memorized formulas, definitions, technical terms.
- Tried to express a set of relationships in mathematical terms.
- Tested your understanding of some scientific principle by seeing if you could explain it to another student.
- Read articles (not assigned) about scientific theories or concepts.
- Practiced to improve your skill in using some laboratory equipment.
- Showed a classmate how to use a piece of scientific equipment.
- Attempted to explain an experimental procedure to a classmate.
- Went to an exhibit or demonstration of some new scientific device.
- Completed an experiment or project using scientific methods.
- Tried to explain to another person the scientific basis for concerns about pollution, recycling, alternative sources of energy, acid rain, or similar aspects of the world around you.

DIRECTIONS: If you are now living in a dormitory or fraternity/sorority, about how often have you done each of the following in that residence unit during the current school year? Indicate your response by filling in one of the spaces to the left of each statement. If you do not live in a campus residence, omit these items.

Very often
Often
Occasionally
Never

Campus Residence

- Had lively conversations about various topics during dinner in the dining room or cafeteria.
- Gone out with other students for late night snacks.
- Offered to help another student (with course work, errands, favors, advice, etc.) who needed some assistance.
- Participated in discussions that lasted late into the night.
- Asked others for assistance in something you were doing.
- Borrowed things (clothes, records posters, books, etc.) from others in the residence unit.
- Attended social events put on by the residence unit.
- Studied with other students in the residence unit.
- Helped plan or organize an event in the residence unit.
- Worked on some community service or fund raising project with other students in the residence unit.

CONVERSATIONS

DIRECTIONS: In conversations with other students at this college during the current school year, about how often have you talked about each of the following?

Very often
Often
Occasionally
Never

Topics of Conversation

- Current events in the news.
- Major social problems such as peace, human rights, equality, justice.
- Different life styles and customs.
- The ideas and views of other people such as writers, philosophers, historians.
- The arts — painting, theatrical productions, ballet, symphony, movies, etc.
- Science — theories, experiments, methods.
- Computers and other technologies.
- Social and ethical issues related to science and technology such as energy, pollution, chemicals, genetics, military use.
- The economy — employment, wealth, poverty, debt, trade, etc.
- International relations.

In these conversations with other students, about how often have you done each of the following?

Very often
Often
Occasionally
Never

Information in Conversations

- Referred to knowledge you had acquired in your reading.
- Explored different ways of thinking about the topic.
- Referred to something a professor said about the topic.
- Subsequently read something that was related to the topic.
- Changed your opinion as a result of the knowledge or arguments presented by others.
- Persuaded others to change their minds as a result of the knowledge or arguments you cited.

READING/WRITING

During the current school year, about how many books have you read? Fill in one space in each column.

Textbooks or assigned books

Non-assigned books

- none
 fewer than 5
 between 5 and 10
 between 10 and 20
 more than 20

During the current school year, about how many written reports have you made? Fill in one space in each column.

Essay exams in your courses

Term papers or other written reports

- none
 fewer than 5
 between 5 and 10
 between 10 and 20
 more than 20

OPINIONS ABOUT COLLEGE

How well do you like college?

- I am enthusiastic about it.
 I like it.
 I am more or less neutral about it.
 I don't like it.

If you could start over again, would you go to the same college you are now attending?

- Yes, definitely
 Probably yes
 Probably no
 No, definitely

THE COLLEGE ENVIRONMENT

Colleges differ from one another in the extent to which they emphasize or stress various aspects of students' development. Thinking of your own experience at this college, to what extent do you feel that each of the following is emphasized? The responses are numbered from 7 to 1, with the highest and lowest points described. Fill in the space of whichever number best indicates your impression on this seven-point rating scale.

Emphasis on the development of academic, scholarly, and intellectual qualities							
Strong emphasis	⑦	⑥	⑤	④	③	②	① Weak emphasis
Emphasis on the development of esthetic, expressive, and creative qualities							
Strong emphasis	⑦	⑥	⑤	④	③	②	① Weak emphasis
Emphasis on being critical, evaluative, and analytical							
Strong emphasis	⑦	⑥	⑤	④	③	②	① Weak emphasis
Emphasis on the development of vocational and occupational competence							
Strong emphasis	⑦	⑥	⑤	④	③	②	① Weak emphasis
Emphasis on the personal relevance and practical values of your courses							
Strong emphasis	⑦	⑥	⑤	④	③	②	① Weak emphasis

The next three ratings refer to relationships among people at the college. Again, thinking of your own experience, how would you rate these relationships on the seven-point scales?

Friendly, Supportive, Sense of belonging	7	6	5	4	3	2	1	Competitive, Uninvolved, Sense of alienation
Relationship with other students, student groups, and activities								
Approachable, Helpful, Understanding, Encouraging	7	6	5	4	3	2	1	Remote, Discouraging, Unsympathetic
Relationships with faculty members								
Helpful, Considerate, Flexible	7	6	5	4	3	2	1	Rigid, Impersonal, Bound by regulations
Relationships with administrative personnel and offices								

ESTIMATE OF GAINS

DIRECTIONS: In thinking over your experiences in college up to now, to what extent do you feel you have gained or made progress in each of the following respects? Indicate your response by filling in one of the spaces to the left of each statement.

<p>Very much Quite a bit Some Very little</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Vocational training — acquiring knowledge and skills applicable to a specific job or type of work.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Acquiring background and specialization for further education in some professional, scientific, or scholarly field.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining a broad general education about different fields of knowledge.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining a range of information that may be relevant to a career.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing an understanding and enjoyment of art, music, and drama.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Broadening your acquaintance and enjoyment of literature.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Writing clearly and effectively.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Acquiring familiarity with the use of computers.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Becoming aware of different philosophies, cultures, and ways of life.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing your own values and ethical standards.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding yourself — your abilities, interests, and personality.</p>	<p>Very much Quite a bit Some Very little</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding other people and the ability to get along with different kinds of people.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to function as a team member.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Developing good health habits and physical fitness.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding the nature of science and experimentation.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Understanding new scientific and technical developments.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Becoming aware of the consequences (benefits/hazards/dangers/values) of new applications in science and technology.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to think analytically and logically.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Quantitative thinking — understanding probabilities, proportions, etc.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to put ideas together, to see relationships, similarities, and differences between ideas.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Ability to learn on your own, pursue ideas, and find information you need.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Seeing the importance of history for understanding the present as well as the past.</p> <p><input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Gaining knowledge about other parts of the world and other people—Asia, Africa, South America, etc.</p>
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ADDITIONAL QUESTIONS

1. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	6. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E
2. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	7. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E
3. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	8. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E
4. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	9. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E
5. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	10. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E

**THANK YOU
FOR YOUR PARTICIPATION**

OTHER ID#, if requested									
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

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