Quality in Vocational Education
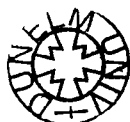
for

Higher Technicians in Hong Kong

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*A Thesis Submitted in Partial Fulfilment
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Abstract of thesis entitled

Quality in Vocational Education for Higher Technicians in Hong Kong

Submitted by

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Concerns in society about public accountability and the demand for quality in industry and management also apply to institutions of higher learning and training. Vocational education is at a critical interface between the needs of a modern commercial and industrial society like Hong Kong and the aims of its education systems. The research in this study into the standards, quality and industry acceptability of the vocational course for higher technicians in the construction field is therefore timely and a potentially valuable resource for educational institutions in discerning how to meet growing societal expectations and demands, as well as to cope with ongoing changes. A secondary part of the research examines the effects of students entering the course at different levels of basic academic qualification. The study reveals that students who have studied Form 7 perform better, in the study of the technician course, than those coming straight from Form 5. This Form 7 effect is found stronger in the early years and becomes less significant as student moves through. The study gives a full account of the curricular evolution of the current higher diploma course in civil and structural engineering, and of the way the course is taught and managed. To suit the changes in education policy and the needs of society, the total student contact hours of the course have been reduced by 30 percent. The lecture hours have been substantially reduced while tutorials, workshop training and project classes have greatly expanded. With the great concern in society, the teaching has incorporated topics on the environment, safety and quality. The main body of the research examines the development, process, management and outcomes of the course from the point of view of quality, appropriateness and satisfaction. Through questionnaire surveys, interviews and group-discussions, a body of information and comment was built up. This body of information sketches the criteria for a quality course and formulates a quality model for vocational education of higher technicians in Hong Kong. The model encompasses categories of conformance, fitness-for-purpose, quality management and assurance, and teaching and learning. In conclusion, some pointers towards areas for further research are proposed.

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Acknowledgements

Declaration

I hereby declare that the work submitted in this thesis is entirely my own, and where I have quoted myself and others, I am using my own part of the work in this thesis. Although I have published part of the findings of the study as two articles in conference proceedings around the topics of Quality Assessment for Higher Technician Courses and Curriculum Changes of Higher Technician Courses, I declare that the thesis is my original work which has not been submitted for a degree in the University of Durham or any other university.

Chapter One   Introduction

This first chapter gives the background to the whole study. Its aims are highlighted in the first section, followed by a brief overview of the history and current situation of vocational education in Hong Kong, as well as an account of the pertinent construction industry today. Next, there is a conceptual discussion of quality in education, and of organisational policy and management towards achieving such quality. The chapter concludes with an outline of the contents and purpose of each chapter in the study.

1.1   Aims of the Study

Academic progress in tertiary education in Hong Kong has become of great concern not only for students but also for educators, parents and the community as a whole. In Hong Kong, as in many other places, quality has become a matter of public judgement, audit and assessment. It is no longer assured through the reputation of the course provider (Warren Piper, 1994).

The recent proposal from the Hong Kong Special Administrative Region Government (Address by the Chief Executive, 2000 : 23) on reform of the Hong Kong Secondary Education System has raised discussion and concerns in the tertiary education sector to meet the changes. The initial impact of the reform proposal on vocational courses for higher technicians is the need to revamp the admission criteria and duration of the courses. The course curricula would also have to be changed accordingly. Notwithstanding these changes, the quality of the courses should not be compromised. Recently, the vocational courses in construction were criticized by the

Construction Industry Review Committee in its Report (2001 : 89). The comment demonstrates demand for quality in vocational courses. Such demand is in expectation of improvement in the quality and performance of higher technicians.

This study focuses on the development of a quality model for vocational education which would be compatible with the Hong Kong culture and environment. The result of such development should be improvement to vocational courses for higher technicians in Hong Kong. In the past decade, the quality of teaching and learning has become an important agenda in higher education world wide. The increasing emphasis on quality by industry in Hong Kong, especially in construction, has raised pressing demands for quality technicians whose performance relies, to a great extent, on the quality of the courses which provide the education and training.

It is one of the aims of this study to identify the attributes of quality in vocational education in this context. Learning outcomes is one of the measures in quality of education. The process of teaching and learning can enhance student achievement. Students' process of learning is much affected by contextual factors such as mode of assessment and workload amount (Drew, 1998). It is hypothesized that changes in curriculum and approach to teaching and learning will bring about improvement enhancing the quality of the course. As a result, the quality of higher technicians will be improved meeting the expectations of industry. This study will attempt to identify the area(s) of concern. The research will probe into the teaching and learning aspects of students' attitude, interest, ability and workload; teaching staff's ability, workload, morale, development and college's resources, management and quality policy. It is hoped that this study will produce empirical data that can be used to inform future course development and operation. Specified entry qualifications can be interpreted as the minimum requirement. Due to keen

competition, admitting students with qualifications higher than those specified is quite normal and common. With the envisaged change of admission criteria, resulting from the education reform, it would be helpful to carry out a study on the performance of the 'Form 7' entrants and compare it with the normal (Form 5) entrants in the vocational course. By extending the research to cover this part of study, it is hoped to obtain findings that can shed light on the significance of entry qualifications to the study of a course.

Flexibility and adaptation to social and environmental changes is another mode of satisfying customers and is one of the attributes of quality. A study on the changes in curriculum over time will provide helpful and valid clues in the development of a quality model. In this study, an analysis of the curricula of a vocational course in various periods of time and under different operations is carried out. The analysis is expected to show the curriculum changes are designed to meet the needs of the changing environment and society. The background reasons and the approaches of making the changes are hopefully useful for the planning and operation of future courses.

1.2   Vocational Education in Hong Kong

The 'Hong Kong Trade School' developed in 1936 by the then Hong Kong Government with the help of the Building Contractors Association was the cradle of vocational education in Hong Kong. The school was renamed 'Hong Kong Technical College' in 1947. In 1957, the Hong Kong Technical College moved from Wan Chai to Hung Hom, to the site where the Hong Kong Polytechnic was later developed. Starting from 1973, the Hong Kong Technical College was taken over by the new establishment, Hong Kong Polytechnic, to run vocational courses.

In the past decade, there has been a rapid expansion in tertiary education in Hong Kong. In 1978 when 9-year compulsory education was introduced, the percentage of local university places available to the 17-20 age group was 2% (UGC, 1996). University places provision was allowed to grow at a rate of only 3% annually (Hong Kong Government, 1977). The alternate route for these students was entering into the Hong Kong Polytechnic. Higher education at that time was criticized as maintaining an elitism whereby it was only accessible to a select few (Cheng, 1996).

During the 1990s the number of tertiary students rose markedly as a result of the government decision that the age participation rate should be increased to 18%. This target was reached by up-grading the polytechnics to universities in 1994. Two new technical colleges were re-established inheriting most of the higher technician courses from the then polytechnics.

Significant moves have been made in Hong Kong away from an elitist system of higher education to one of mass access. Percapita funds have become scarcer and performance related. The rapid increase of tertiary education places in recent years has, no doubt, set a new landmark in the development of higher education in Hong Kong. However, education at tertiary level has since been faced with a situation where not only was there a rapid growth in student numbers, but the students were coming from a much wider range of socio-economic backgrounds and achievement standards. While most people welcomed the equity and increased opportunity for higher education, concern was drawn to the academic standards and the quality of student learning. Academic quality in terms of quality of teaching and learning has since attracted great attention (UGC, 1996). The major concern has been the maintenance and improvement of academic standards in student learning. On the other hand, accountability by higher institutions for their use of public funding and

resources has also placed much emphasis on quality assurance, which involves standards in both teaching and learning. The terms in which tertiary institutions are held accountable are taking an increasing importance with words like "marketability" and "competitive edge" used to describe courses as well as commercial goods and services (Hong Kong Polytechnic University, 1996; Barnett, 1991).

Educational standards involve the values that are attached to educational outcomes and processes, and Ramsden (1986) contends that these standards should be judged by the quality of learning demonstrated by the students. But how can a good quality of student learning at tertiary level be maintained? How can student's academic achievement be improved? What are the factors that affect academic progress in higher education? What are the factors associated with academic success? These are but some of the important questions that have been raised. Concern for the various aspects of student learning has resulted in a concerted effort of research into teaching and learning at tertiary level in recent years in Hong Kong.

The education sector is not the sole demander for quality, industry is also pressing for quality product and service. In an era of fast technology advancement, the construction industry in Hong Kong in the 21st century has an ever-increasing need of a workforce that is competent enough to cope with the changes in the industry. In order to satisfy the socio-economical requirements of higher efficiency in operation and better quality in the finished products, there must be sufficient number of suitably and adequately trained technicians in the workforce to carry out day-to-day operational and executive work. These technicians have to be well equipped, through their training, with skills and techniques to face the challenge of the paradigm shift. To ensure that the technicians are appropriately trained to serve the need of the

industry, it is essential to have a program with a curriculum properly designed and developed with these objectives in view.

The Construct for Excellence Report, published by the Construction Industry Review Committee of the Hong Kong Special Administrative Region Government in January, 2001 remarked that 'the structured training framework and the consequential modifications to higher technician training curricula to align them with the needs and requirements of the industry should be drawn through the collaborative process involving industry and the training institutions' (p.90). It also said that the industry's overall performance is far from satisfactory (p.23). A change of culture and mindset in the construction industry is needed to bring about performance breakthroughs. The report recommended that tertiary institutions should review and enhance the curricula of construction-related courses to facilitate the envisaged culture change in local construction (p.87).

1.3   The Industry in Hong Kong

Hong Kong's cityscape has been transformed beyond recognition during the past few decades as a result of a massive infrastructure development. This is the vitality and energy of the construction industry. Achievements of local construction have provided a better living environment and stimulated economic activities in other sectors. A remarkable social and economic transformation of society has been made (Hong Kong SAR Government, 2001).

The construction industry is one of the main pillars of Hong Kong's economy. Over the past decade, public and private sector investment in infrastructure development amounted to about HK$400 billion. Since 1990, the industry's contribution to GDP in percentage terms has been in the range of 4.9% to 6%,

indicating the sustained importance of the construction industry as a backbone of the local economy (Hong Kong SAR Government, 2001 : 19).

The construction industry is a large employer in the economy, comprising a vast diversity of personnel from different disciplines at managerial, professional, technician and tradesman levels. Despite the considerable contributions made by the construction industry to Hong Kong's overall economic development, the industry's overall performance is commented on by the Construct for Excellence Report, (2001 : 23) as far from satisfactory. The key problem areas identified are :-

- poor site safety record;

- unsatisfactory environmental performance;

- lack of client-focused approach;

- extensive use of traditional labour-intensive construction methods;

- an inadequately trained workforce.

Many of these problems stem from long-established practices and processes. To bring substantial improvements to the image and operation of the industry, a change of culture and mindset among stakeholders is needed. Immediate attention to the above problems is demanded.

It is recognised that manpower is the most valuable asset in the construction industry. The smooth and effective delivery of a construction project depends on the quality input of personnel at all levels in all stages from project inception through design and implementation to completion. To improve the construction industry, a workforce capable of, and committed to, delivering high quality construction products has to be nurtured and retained. The Review Committee has made recommendations on the manpower development. The construction-related

courses are recommended to improve in the following areas (Hong Kong SAR Government, 2001 : 87).

- Review and enhance the course curricula to facilitate the envisaged culture change.

- Improve the students' soft skills in communication, management in general and construction practices.

- Provide more opportunities for students to acquire site experience.

- To encourage teaching staff to acquire practical experience in the industry from time to time so as to keep themselves abreast of the latest developments in the industry.

- Collaboration of industry and education institutions in formulation and operation of the training courses is urged.

The Review Committee also observes that due to the low professional status of site supervisors (technicians), the industry has encountered difficulties in attracting quality people to join this stream of construction personnel (p.89). It recommends to strengthen their training arrangements and provide them with professional recognition. It is recognised that both academic training and practical experience are needed to equip the technicians with the skills necessary for the effective discharge of their responsibilities.

1.4   Organisational Quality Policy and Management

It is recognised that an academic institution has the responsibility to produce courses of the highest possible quality at an optimum cost. The institution also has to be able to demonstrate to outside bodies that it achieves this. Thus,

procedures have to be developed ensuring that its courses are open to audit and scrutiny. The existence of such procedures is also a strict requirement for credibility of any tertiary education institution. The Hong Kong Technical College is commissioned by the Hong Kong Government to run vocational courses at tertiary level. It defines quality in education as :-

"The pursuit of scholarship through teaching and study in such way as to increase its standing in the community and to satisfy its clients."

(Hong Kong Technical College, 1995a)

Encompassed in this definition are four key quality issues which need to be addressed :

$$Q1 = \text{Fitness for purpose}$$

$$Q2 = \text{Customer satisfaction}$$

$$Q3 = \text{Satisfy standards}$$

$$Q4 = \text{Cost effectiveness}$$

$$\text{Excellence} = Q1 + Q2 + Q3 + Q4$$

(Hong Kong Technical College, 1995a)

It is believed that quality cannot be guaranteed without proper management of the course. It is also agreed that only through control of the validated course scheme relevant to the given time, can management adequately insure that appropriate standards are being set and maintained (Hong Kong Technical College, 1995b). To concretise this belief, committees have to be set-up to oversee and contribute to course development. Figure 1.1 shows the process of curriculum

development under the hierarchy of the committee system of the organisation. The organisation realises that validation and review of courses is not an exact science. There will be relative strengths and weaknesses in every course. A judgement has to be made about the balance of these and whether weaknesses are serious. The constructive side of review and approval needs emphasis. This will ensure the greatest benefit to the courses and their students from the process. The most important aspects of courses that have to be concentrated on are :-

- philosophy, aims, and objectives of the course;

- community need for the course;

- content and structure of the course;

- learning and teaching strategies;

- assessment methods as related to the course aims;

- student progression within the course and course regulations;

- academic and supporting staff requirements;

- other resources required;

- staff development;

- entry requirements and prerequisites;

- modes of attendance;

- links with industry and commerce, and advisory educational and professional bodies;

- course management, organisation, leadership and monitoring of standards.

(Hong Kong Technical College, 1997)

Every aspect of service delivered can be improved upon and opportunity exists at all times. To maintain and improve academic quality ensuring that all the courses delivered and services provided to customers are consistent in meeting the industrial needs and requirements, a framework – 'quality policy' has to be developed in the organisation. With regard to this, it is believed that organisational improvement is best gained through identification and solution of problems by course teams within academic departments. Thus the quality policy has to be developed by individual academic departments with due consideration of its uniqueness. The policies developed have to attain a consistent standard in encompassing the criteria specified by the organisation. The quality policy shall encompass the following criteria (Hong Kong Technical College, 1995b) :-

- The quality model must seek to improve the quality of teaching and learning.

- Must be flexible.

- Must harness the commitment of all staff.

- The learners should be involved in improving the process of teaching and learning.

- The policy should establish measurement of requirements and of success.

- The policy increases participation and attainment.

Quality is no longer compartmental, but rather a total system. Improvement should include everyone, in all parts of the organisation. A quality culture has to be developed within the organisation. Management commitment is essential to lead the quality process. Yet staff morale is one of the major influences on quality. Staff morale affects the performance of staff and hence the quality of their services. One way to boost morale is to involve staff in the 'bottom up' approach in

quality. Ownership of/buying into the concept of quality is the key issue in developing an environment where quality service becomes the base on which all other activities are built (Hong Kong Technical College, 1995b). In a turbulent environment of technological and socio-economic changes, the quality model to be adopted must be flexible to cope with the ever changing environment. Thus a continuous quality improvement (CQI) process should be adopted to manage the total quality of the services delivered by the organisation.

1.5   Organisation of the Thesis

This thesis starts with this chapter giving a review from an historical perspective, of the development of vocational education in Hong Kong. There is an overview of the industry and the trend of quality demand by industry is discussed. Then comes a description of the quality management concept in an organisation.

Chapter Two reviews the literature pertaining to the major constructs in this study. Definitions as well as various concepts of quality in education are discussed. Conceptualisation of higher vocational education is deliberated. The role and status of higher technicians in the industry of Hong Kong is described, highlighting the position and importance of the higher technician courses. Career development of the graduates, in conjunction with the socio-economic changes, gives impetus to a review of the objective of the course. This chapter also goes into detailed discussion of the conceptualisation of quality education, forming a good basis for preparation of the methodology of this research.

Then follows Chapter Three describing the methodology of the research. The instruments used in the research are discussed in detail. An account of the concept of the instruments leads to the detailed description of the preparation and

operation of every instrument employed. Explanation is given on how the questionnaires were designed and on the selection of the rating scales for the questionnaires. The data obtained from the interviews and the group discussions serve to supplement to those obtained through the questionnaire survey, as well as providing a triangulation to verify the construct validity of the survey. At the end of the chapter, a flow chart is presented showing the chronological procedures of each activity of the research is presented giving a clear picture of the survey undertaken.

Chapter Four reports the outcomes and results of the study, giving an in-depth discussion of the outcomes and findings in relation to the objective of the thesis. It starts with an account of the course and then the management strategy of the course. This introductory information briefs the reader about the current situation of the course, and may be used as a base for the reader to visualize the findings from the research. A wide spectrum of issues has been covered in the survey. The concerns discussed are :-

- appropriateness of the course;

- course curriculum and management;

- workload;

- technical and communication proficiency;

- teaching and learning;

- college support and facilities;

- employment situation and employability;

- support to further study.

The above are the core contributions to the quality of a course. Based on these contributions, the quality model is developed and described in the next chapter.

The other findings on the 'changes in curriculum' and the 'effect of pre-entry qualifications' are also detailly analysed and discussed in that chapter.

The thesis concludes with Chapter Five giving an overall summary of the research findings, general discussion, implications and limitations. A course quality model is proposed. The thesis concludes with recommendations for future research.

1.6   Summary

This chapter has outlined the aims of the entire study, giving a brief account of the current situation in both vocational education and the construction industry it is related to. The interconnections of policy, management and quality in the education process have been looked at, and an outline given of the context, methods and outcome of the research on which this study is based.

Chart 1.1   Route for Curriculum and Course Development

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                    ┌─────────────────────────────────────────┐
                    │ Proposal from External or Internal Source │
                    └─────────────────────────────────────────┘
                                      │
                                      ▼
                    ┌─────────────────────────────────────────┐
                    │          Feasibility Study by            │
                    │    Discipline Board / Course Board       │
                    └─────────────────────────────────────────┘
                                      │
          Resource                    ▼
┌────────────┐ Issues     ┌─────────────────────────────────┐
│ Management │◄- - - - - -│         Academic Board          │
│ Committee  │            └─────────────────────────────────┘
└────────────┘                        │
                                      ▼
                        ┌─────────────────────────────────┐
                        │          Course Board           │
                        │     (to create the proposal)    │
                        └─────────────────────────────────┘
          Resource                    │
┌────────────┐ Issues     ┌─────────────────────────────────┐
│ Executive  │◄- - - - - -│       Academic Review           │
│ Committee  │            │       Committee /               │
└────────────┘            │       Validation Panel          │
      ▲                   └─────────────────────────────────┘
      ┊                      │ Validation    Validation
 Resource                    ▼               Documents
 Issues                                      Filed      ┌────────────┐
      ┊          ┌─────────────────────────┐  ─────────►│ Academic   │
      ▼          │      Academic Board     │            │ Secretariat│
┌────────────┐   └─────────────────────────┘            └────────────┘
│ Mangement  │◄─ Report  │         │         Report
│ Committee  │           │         │              ┌────────────┐
└────────────┘           ▼         │              │ Discipline │
                 ┌──────────────┐  │              │ Board      │
                 │ Course Board │  │              └────────────┘
                 └──────────────┘  │
                                   │              ┌────────────┐
                                   └─────────────►│ Academic   │
                                                  │ Quality    │
                                                  │ Committee  │
                                                  └────────────┘
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Chapter Two   Literature   Review

2.1   Introduction

In the field of vocational education, account must be taken not only of competing and sometimes conflicting viewpoints of educational theory in general, but also of the specific expectations and requirements of the industries to which vocational education is related. Thus, in formulating a framework and argument for this research study and thesis on the quality of vocational education for higher technicians, a review of relevant literature is useful and is here presented. This review attempts to link and intertwine the core ideas on quality in education with the objectives of the teaching courses, assessments of these, student development and learning outcomes. Since any measurement of quality should be based on a coherent philosophy of what constitutes 'quality' in higher vocational education, this chapter starts with an interrogative discussion of the various conceptions of higher vocational education, its quality and objectives. It looks at the question of quality and its management from the perspectives of the different 'stakeholders' in vocational education, as well as from current governmental and societal expectations. Finally, a perspective is suggested which guides the concept of quality and its assessment put forward in this research, and underlies its concern for what students have learnt and to what extent this is attributable to their college experience.

2.2   Conceptualisation of Higher Vocational Education

For employees to function in an increasing high-tech and economically competitive society, more specialised job skills are needed. Also, to enhance

employee adaptability to meet changing technology needs, a sound background in academic basics and competence in generic transferable skills are essential.

The proliferation of high technology industries and the technological transfer have led many educators to believe that the skill requirements of future jobs will become more sophisticated and employees will need more specialised technical education instead of general education (Zhong, 1992: 92). This is the most commonly cited justification for the development of vocational education.

"Vocational education is the comprehensive term referring to those aspects of the education process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life."

(UNESCO, 1979)

Vocational education is an integral part of general education; a means of preparing for an occupational field and an aspect of continuing education (Henze, 1984). The role of vocational education is to provide students with a core of transferable occupational skills and provide more supervised work experience.

Modern societies need a well-trained and highly skilled workforce. Forecasts of the future need for skilled employees suggest that this trend will continue. It is driven by technological processes and changes in work organisation at the production level that lead to continuously changing demands of the workplace. This results in a permanent state of tension between the changing job requirements and the skill level of the workforce. The better the current skill level of the workforce

is able to meet the changing demands of the workplace, the better the performance of the vocational education and training system of a society.

There are, in general, two ways of bringing both sides closer together. (a) By updating the skill levels of employed workers through further vocational education and/or training; (b) by giving young people a future-orientated vocational education. Studies have shown that the vocational training system offers the greatest potential for skills development and updating. Hence, the performance of the vocational education/training system has significant effect on how fast and extensively the skill level of the workforce can be adapted to the demands of the workplace (Groeber, 1998). The effectiveness of the system is measured by the extent to which it is able to:-

• attract the young generation into the occupations of the future and skills which employers need;

• not only cover technical contents but also helps students to learn how to cope with new challenges and prepares them for lifelong learning; and

• provide people with the basic set of skills it takes to transfer from one job or area of work to another.

Investment in vocational education needs justification. There are benefits in running vocational education. Such benefits may justify its investment. The benefits can be grouped into three categories:-

• To provide help for specific groups and to act as a policy to fight poverty (Levin, 1977; Li, 1981). Vocational education increases earnings potentials of those who receive the education and may contribute to equalization of income distribution in society.

- To reduce unemployment (Meyer and Wise, 1982; Schober, 1984). Imparting more employable skills through vocational education could enhance the employment opportunities for the graduates.

- To up-grade the qualities of workers in response to technological changes (Henze, 1984; Kone, 1984; Grubb, 1984; Min, 1987).

Apart from the above benefits, the rationale for diversification of vocational education from the main stream of general education is the concern for worker productivity. From the economic perspective, the rationale for investments in vocational education is the improvement of worker productivity which in turn brings high economic returns. When the low-income populations become more productive, the whole economy expands as there is more employment for the more productive workers.

It is found, in Hong Kong, that vocational education, as a whole generates a larger and more significant earnings effect than general education (Zhong, 1992: 102). However this earnings effect is not stable across the various fields of education. In a fast growing economy, like Hong Kong in the mid 1990s, the earnings effect of various fields of vocational education are not the same. The pattern of economic returns seems to follow the conditions of the corresponding field of work.

Vocational education is something like a factory, where the 'products' are knowledgeable and skilled workers who will contribute to the productivity, efficiency, and profits of business and industry and the economic well-being of the society. In order for vocational education to determine how well it is serving the community, to better 'market' their products, and to make improvements, periodic review of employers' opinions and perceptions are helpful and necessary. Deming's (1982)

discussion of questions about quality, what it is, who defines it, and who cares about it is relevant to higher vocational education. Deming emphasised the need to study the needs of the consumer (in the case of vocational education, this is the employer), to understand the consumer's needs and wishes, and thus to design products (courses) and services that would be of a better standard in future. His fourteen quality improving points, including defining standards of service and innovating for better service, in-service training, improved supervision, and having management take responsibility for faults and for following through on suggestions from staff and for assisting employees to improve their performance are essential points to consider.

In addition to assessing employer satisfaction with the adequacy of training and preparation, and the actual job performance of vocational graduates, it is also necessary to ask employers to evaluate the adequacy of a specific curriculum, or to make comparisons between vocationally trained employees and those who have not had such training. Employer opinions about the strengths and weaknesses of vocational courses also yield useful information. Their opinions are effective means of setting priorities for course improvement.

Employer's feedback assists vocational educators in remaining current with labour needs, technological changes and business procedures. Soliciting employer input often brings with it improved relations between vocational courses and local industry, and heightens interest in vocational education. Information from employers on job content and skill requirements are very helpful materials/information for student guidance and job counselling.

The irreversible demographic and economic changes, and the rapid technological advancements and occupational developments occurring in society affect the nature and content of many jobs, the skill training needed by entry-level,

and the general views about the appropriate role of various occupational training courses or programs. Thus some employers and educators consider the socio-economic changes would increase the demand for more highly specialised job skills (Carter and White, 1986: 9). They opine that vocational education should be in the direction of developing training and re-training courses that match local industry needs. They believe that a society's overall economic performance can be best enhanced by linking job-specific skills to employers' needs or production processes through more customised vocational education and training.

On the other hand, there is a group of employers and educators arguing that the appropriate role of vocational education is to develop a sound academic base, transferable occupational skills, 'employability' skills and positive attitudes towards work and life-long learning (Carter and White, 1986: 9). There is an increasing number of people claiming that the current economic environment and technological advancement will require higher levels of basic academic skills (reading, writing, mathematics and science), an improved work ethic, and greater worker adaptability (Carter and White, 1986: 9). This calls for better integration of vocational education with general education. Employers are interested in hiring individuals who have received occupational specific training, but they also want individuals with a solid grounding in basic academic skills (Imel, 1989: 1) such as basic skills in reading, writing, and math; communication skills, both speaking and listening; problem-solving ability; employability skills; reasoning skills; leadership skills; computer literacy; interpersonal skills; ability-to-learn/learning-how-to-learn skills; and collaborative/teamwork skills. They consider vocational education should focus on preparing youth for a lifetime of work in a dynamic economy where multiple career changes may be necessary (Carter and White, 1986). With the influence of the

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current trend of shrinking resources and increased training demands, there is call for better co-ordination among the various educational systems.

In the technical (engineering) field of vocational education, following the system of practice, the nature of duty sharing and the hierarchy of responsibility in the profession, the vocational courses are, in general, at three levels: craft, technician and technologist. Professional bodies do stipulate the required academic achievements, apart from professional experience/training, for various grades of qualification or membership. In the current system, 'associate' member is the grade of membership for technicians. To qualify for this grade of membership, apart from practical experience and training, a person has to be holder of a diploma/higher diploma from the relevant higher vocational course. To be a professional engineer/technologist, he/she has to have graduated from an accredited degree programme in the relevant field. The professional engineer is the highest step in this ladder. It is understandable that most, if not all, would try to reach to the top step. In Hong Kong, this phenomenon is serious and very obvious. The significant discrepancy in social status, pay-scale and future prospects between technicians and professional engineers together with the unique Chinese culture in Hong Kong have influenced the mind-set of the technicians to look for routes to upgrading themselves to the top-step of the ladder. Before the mid-1980's they could sit the UK Engineering Council examinations as an equivalent to the first degree qualification. Now this door has been closed and they have to join the university to pursue their first degree. Some do the further study immediately after the technician course and some do the study after working for a couple of years, with some savings to support themselves.

In Hong Kong the shortage of technicians has been persistent (CITA, 1995). Hong Kong's higher education has undergone drastic expansion in the last

decade. The rapid and drastic increase in degree places has provided ample opportunities for qualified secondary school leavers, as well as technician course graduates to pursue university education. This drags down the urge for enrollment to technician courses (IVE, 2000). It further exacerbates the shortage of technician situation. In the last decade, graduates from the 'higher diploma' courses could be admitted to second year of the relevant degree programme in local universities. As the shortage problem got more serious, in particular in the mid-1990's, when the construction industry was at its peak, the industry had a very loud voice commenting on the second year admission system. As a result of that pressure the higher diploma graduates could no longer enter year two. They had to compete for year one places with current form seven school leavers based on their A-level examination results, which understandably were not competitive; otherwise they would have gone to university study instead of joining the technician course at the time when they finished their secondary school. Overseas universities have their own admission criteria and some have flexible admission arrangements which are specially designed for this group of graduates. This further study phenomenon raises the question of whether the technician course should be a feeder for the degree programmes. The students would like to have a through train provision. This further leads to the question about the objective of the course.

There is a social demand for technicians. The Hong Kong government under the pressure from industry and the employers has had to set a policy of training more technicians by increasing the 'higher diploma' places and expanding the 'technical colleges' in 1993. Thus, the government, in another capacity as the funding agent and the college administrators in executing the policy have had to set the objective of the technician courses as providing an education and training with an

output of graduates employable as technicians. It also had to make the 'higher diploma' course a terminal programme leading to no further study. Thus the curriculum at that time was prepared without consideration of matching the degree programme. It was purely geared to the student's suitability for and employability as a technician.

Students and academic staff hold different philosophies of education. Students would like to see the course as a stepping stone to university degree study. In that way they have the option to work or to further study. Academic staff consider it is good if the course can kill two birds. That would give more flexibility and better benefit to the graduates.

Due to keen competition, universities, local and overseas, have specially designed programmes for graduates of diverse backgrounds. A significant number of graduates from the technician course are admitted to the degree programme in spite of the industry's strong criticism.

The economic downturn due to the financial crisis in 1997 has led to a drastic drop in construction activities. The demand for technicians has dropped correspondingly. With respect to social changes, the through train voice, regarding academic standards and levels, is getting louder. Thus in the recent review of the course curriculum there has been a move to give consideration to matching with the degree programme.

With respect to the socio-economic environment and social changes, the industry has to consider approaches to attract more new blood as well as to retain those who have already joined the technician workforce.

Summing up the above discussion, the following questions arise:- Whose objective should the course be targeted at? Who and what determines the course objective?

2.3   Conceptualisation of Quality Education

2.3.1   Defining Education Quality

Defining 'quality' is often fraught with difficulties in defining 'quality' (Sallis, 1993). Diana Green (1994) says quality is an elusive concept and is also a value-laden term. Quality is a 'relative concept' that may mean different things to different people.

> "Quality is relative to the user of the term and the circumstances in which it is invoked. It means different things to different people, indeed the same person may adopt different conceptualisations at different moments. This raises the issue of whose quality?"
>
> (Harvey and Green, 1993: 10)

There are different methods of assessing quality, with the result that different quality outcomes would be demanded by different people for different things.

Quality is often a subjective term and is linked to the expectations and satisfaction of an organisations' customers (Ellis, 1993b). When there are multiple customers, quality is defined as 'fitness for purpose' (Harvey and Green, 1993: 16; Green, 1994: 15; Juran,1974). Quality also means an emphasis on conformity to standards, or on a 'predictable degree of uniformity and dependability at low cost and

suited to the market' (Deming, 1982). Thus quality has the sense of conformance to requirements. In the higher vocational education context, 'quality' means meeting the needs of the students, the employers, the industry, society, and the education/funding authority. The education institutes have to reassure themselves that their teaching is up to the specified standard and is meeting the need. As public funded bodies they also have to reassure society that they are delivering the service that they are paid to deliver.

Defining quality appears to be the responsibility of the customer and the supplier (West-Burnham, 1992). The customer has to define the specification with reference to required outcomes, intended usage, costs, standards, quantity etc. It is for the supplier to clarify the definition, propose enhanced standards and conform to these standards.

In education, there are more than one set of customers. Often, the requirements of stakeholders, customers and clients overlap. Therefore, it is up to the suppliers to strike a balance between competing interests and needs, and to meet customer needs within those constraints (Sallis, 1993). The lack of agreement will create tensions and discord between these groups and compromise quality (Lomas, 1996).

Harvey and Green (1993) provide a framework for defining 'quality in education'. They conceive quality as a multi-faceted notion and view 'quality' as 'perfection', 'fitness for purpose', 'being transformative' and 'making value for money'. Perfection is that which is universally regarded as of highly superior standards. Fitness for purpose is concerned with teaching effectiveness (the outcomes of the teaching process) and teaching efficiency (the inputs to the teaching process). The former relates to the achievement of course aims and objectives, and the latter to

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the resources that are used to meet the aims and objectives. The degree to which the teaching has developed the knowledge, abilities and skills of the students is the transformative quality. Linked to this is the measurement of 'value-addedness'. The last one 'value for money' is closely linked to the notion of accountability. It is an assessment in terms of the returns from investment or expense in a certain area.

2.3.2   Quality Concept

De Weert (1990) says that the goals of higher learning institutes provide a framework with both internal and external dimensions upon which quality can be assessed.

Barnett (1987) emphasises two key aspects of maintaining quality, namely critical self reflection by those involved and direct dialogue between academic staff and their peers in the wider community. He opines that the essential requirement for maintaining quality is for evaluation to become part of a continuing process of critical self reflection on the part of the course team rather than a spasmodic response to external demands.

Warnock (1990) emphasises that quality is important as education institutes will be challenged by having to meet the varying needs and expectations of a large number of students. She says that teaching quality 'will be judged good by whether or not it contributes to the achievement of purpose', and that 'higher education has a variety of purposes'. Thus, she shows support for the view that quality is defined by 'fitness for purpose'.

Harvey and Green (1993: 16) say that this is a functional definition of quality. Moodie (1986) says that fitness for purpose is deceptive. He raises the issue of whose purpose and how fitness is assessed.

Fitness for purpose is one of the discrete notions of quality conceived by Harvey and Green. They take different approaches to quality in terms of their conceived interrelated perceptions of quality. Exceptional to them means something special as distinctive, excellent and passing the required standards.

Their second approach is in terms of perfection. 'Quality' aims to match perfectly in process and specifications (Ingle, 1985). This can be described by two interrelated dictums : zero defects; getting things right first time.

Their third approach relates quality to the purpose of a product or service. It judges quality in terms of the extent to which a product or service meets its stated purpose(s). Meeting the purpose can be (a) conforming to customer-determined specifications, and, or (b) fulfilling the provider's mission. Purposes may change. Thus constant re-evaluation of the appropriateness of the specification is required. For example, if the purpose of higher vocational education is to provide an appropriately educated workforce, is the system as a whole providing the right number of graduates? Is a particular course providing the right balance of knowledge, skills and training?

Conforming to specification is meeting the requirements. In theory it is the customer specifying in advance what is required, and judging quality on the extent to which this is fulfilled. The requirements may have been originated by the customer but are likely to be mediated by cost, resources, marketing and so on. Hence requirements may have been mediated before they become specifications.

In practice, customers rarely specify their individual requirements. On the contrary, the producers (mass-produced products) or providers (standardised services) assess what the customer is prepared to buy and produces or provides what it is capable of and targets production on consumers (Harvey and Green, 1993: 17).

Deming (1982) says that quality can be improved by the adoption of a four step process: (a) to design the product (course) or service; (b) to make it; (c) to put it on the market; and (d) to test it in service. The last step, gives the consumer a voice in the delivery of the service.

"The difficulty in defining quality is to translate future needs of the user into measurable characteristics, so that a product can be designed and turned out to give satisfaction at a price that the user will pay."

(Deming, 1982)

Thus it can be interpreted that the customer's requirements or needs are determined by the producer or provider. The requirements of an individual customer are rarely reflected in a specification. The process of production or service provision is in the hands of the provider. Quality, in the 'meeting requirements' approach is judged on the output, not the process. However, the customers would like to have their requirements fulfilled in an 'environmentally friendly' manner (Harvey and Green, 1993: 18).

This raises the question:- who is the customer, the service user (the students), the academic staff, or those who pay for the service (the funding agent, the employers)? Is the student the customer, the product or both? (Collins, Cockburn & MacRobert, 1990). Students are the consumer of educational provision as they pass through the education system, consume what is on offer and emerge as graduate from the system. They are not the only direct consumers of higher education. Employers are also consumers of the product of education.

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The customer is not always able nor necessarily in a position to specify what is required (Elton, 1992). This raises the question how students' requirements are determined. Traditionally, higher vocational students have to opt for what is available to them under restrictions such as entry requirements and availability of places. So students are not able, by and large, to specify the product. Their requirements are determined by the provider and are in terms of what the society, employers and market need.

Standards of quality are difficult to state and maintain. In some cases services are not only physically but mentally intangible (Walsh, 1991). So there is an argument that in a service industry like education the definition of quality should go beyond merely meeting customer requirements and should be about 'delighting' customers. It is, of course, difficult to measure 'delight' (Sallis & Hingley, 1991: 3).

Quality can be approached in terms of fulfilling the stated objectives or mission. It is about being able to meet consistently the standard which the producer has set for itself (Sallis & Hingley, 1991). Quality as 'fitness for purpose' in this sense becomes fitness for, and performance in, the market as perceived. A high quality institution is one which clearly states its mission and is efficient and effective in meeting the goals which it has set. -

Putting the onus on the institution to identify and fulfill a mission only partly satisfies the customer's specification. It is still necessary to identify whether the institution is achieving the purposes it has set in its mission statement. This has to be done through quality assurance.

Consumers may have a different conception of the quality of the product from the producer. It is the consumer who is the arbitrator of quality, because without customers there is no business (Sallis & Hingley, 1991: 3)

Sallis & Hingley (1991) argue that meeting specifications is necessary but not sufficient as quality products have to appeal to consumers. Consumer satisfaction provides the evidence of quality. Customer/consumer satisfaction in a higher vocational education institution is the proxy assessment of quality based on the declared levels of satisfaction of the students (Mazelan et al, 1991). Students have very little information on which to make quality comparisons and, in practice, do not draw direct links between satisfaction and quality (Roberts & Higgins, 1992). They may not be in a position to judge whether their needs are being met. Thus satisfying students' needs is not the same as satisfying their wants (Marchese, 1991).

Students' satisfaction may also affect the product. Widespread dissatisfaction among customers has some post hoc effect on quality. Nonetheless, satisfaction still leaves control of the product or service in the hands of the providers. Sallis & Hingley (1991) caution that educational institutes need to be careful that they base their quality standards upon an analysis of customer wants and needs and not just upon their own definitions.

The value for money approach is the notion of accountability (Kogan, 1986; European Commission, 1991). Public services are expected to be accountable to the funders and to the customers (Pollitt, 1990). This notion of quality as value for money is led, in a competitive situation, by the market-determined mission. This is concerned with the teaching effectiveness and efficiency.

Although it is implicitly assumed that the market will take care of quality in the long run and that institutes will ensure the quality of what they provide, a proper validation process is still needed. Performance indicators have to be developed to monitor efficiency. Student-staff ratio, indexes of revenue, resources

and examination results are principally used as crude measures of institutional efficiency (HMI, 1990).

Education is not a service for a customer but an ongoing process of transformation of the participant. This leads to two notions of transformative quality : enhancing the consumer and empowering the consumer (Harvey & Green, 1993: 24). A quality education is one that effects changes in the participants and thereby enhances them. Value-added notions of quality provides a summative approach to enhancement (Astin, 1985, 1991; Barnett, 1988). The term value-added has two quite different meanings. The common sense meaning of the term is to add value to something (e.g. we add value to students in our schools by teaching them to read) (Tymms, 1999: 59). For school effectiveness, the term refers to the relative progress of students. Value-added for a student is the extent to which the student did better or worse, or learn more or less knowledge than might reasonably be expected (Fitz-Gibbon, 1996: 120). In statistics, value-added has traditionally been called the residual of regression. Value-added approach has to compare like with like. It can be used as a research tool (Tymms, 1999: 67). It is a measure of quality in terms of the extent to which the educational experience enhances the knowledge, abilities and skills of students (HM Government, 1991; HMI, 1990: 7). A high quality institution is one that greatly enhances its students (Astin, 1990). The measurement of value-added provides a quantifiable indicator of 'added value' but conceals the nature of the qualitative transformation.

The other element of transformative quality is empowerment (Harvey & Burrows, 1992). In education, empowering the participant involves them in decision-making that affects their transformation. The transformation process itself provides

the opportunity for self-empowerment with consequent impact upon decision making processes that affect the participant. There are four ways of empowering students.

- Through student evaluation of programmes.

- Guarantee students minimum standards of provision and giving them responsibility for monitoring the provision.

- Giving students control over their own learning.

- Developing students' critical ability, which attempts to empower students not just during the education process, but for life.

(Harvey, Burrows & Green, 1992a: 6)

Barnett (1994) claims there is a logical and three-fold connection between different conceptions of higher education, different approaches to quality and the identification of different outcome measures. He analyses the interconnectedness among conceptions, approaches and outcome measures by four dominant contemporary conceptions of higher education. When higher vocational education is conceived as the production of highly qualified and skillful manpower, the graduates are seen as products whose employment and rates of return provide a measure on the quality of the education that they have received. When higher vocational education is treated as a training for a vocational career, the performance indicators generated by this view are the output of staff and students and the input measures of employment ability. The third contemporary conception is higher education as the efficient management of teaching provision. The outcome measures are the efficiency indicators on completion rates, unit costs, student-staff ratio and other financial and resources data. In the last ten years, the student-staff ratio in institutions of higher

education in Hong Kong has moved steadily upward while their unit costs are correspondingly declining. In the researcher's college, the student-staff ratio has moved from 13 to 18 from 1993 to 2000. With the number of students in the system growing remarkably there is a shift from an elite to a mass system of higher education. This results in a significant number of students admitted on the basis of unconventional qualifications and from diverse backgrounds. The last conception is conceiving higher vocational education as a matter of extending life chances. This conception focuses on the participation rate (the growth in student number and the flexible range of entrants).

These are the four different conceptions of the purposes of higher vocational education. Each of them has its own definition of quality and with a distinctive set of performance indicators that would emerge from its approaches. These four conceptions are not totally dissimilar. They are seen as a total system, in which students enter as inputs, are processed, and emerge as outputs and are also seen as a blackbox, opaque to outsiders. They do not focus on or show an interest in the educational process, or the quality of the learning achieved by the students. They only focus on the quality of desired inputs and outputs. In vocational education, a distinctive set of outcome measures is applied. Imel (1990: 1) states that the most frequently used outcome measures for vocational education are labour market and learning. Although each of these has its strengths and weaknesses, they reflect the broadly accepted definition of the principal objectives of vocational training – the preparation of individuals for productive and gainful employment. Indicators of labour market performance of vocational graduates include job placement, earnings, and duration of employment and unemployment. She says that many vocational educators object to the use of economic indicators as the sole measure of program

effectiveness on the following grounds:- (1) adopting placement as the primary criterion ignores the multiple goals of vocational education; (2) a large number of economic and personal factors beyond the control of the vocational education system determine the employment of graduates; (3) a narrow focus on placement encourages a program to admit only those who can be placed and to concentrate on coaching in job placement and interview skills at the expense of vocational skills; and (4) placement rates and other economic indicators measure the gross effect of participation (total places, total earnings) rather than the net effect (the difference between labour market outcomes that occurred when students participated in vocational education versus what would have occurred had these programs not existed (Hoachlander, Choy, and Brown, 1989; OTA, 1989).

Learning outcomes are measures of what individuals learn in school. Vocational educators have much more control over what and how much students learn than they do over what happens to them in the labour market. In vocational education, occupational competency testing is commonly used to measure learning outcomes. It is designed to assess mastery of tasks and knowledge found in specific jobs. However many educators do not agree to use competency tests as the sole basis for performance standards. The tests do not necessarily indicate how a person would perform at work. Use of competency tests could encourage emphasis on highly specialized skills (OTA, 1989). The best way to predict for individuals will always be to monitor on the job (Fitz-Gibbon, 1996: 94).

No single outcome measures currently in use appears sufficient for judging the quality of a vocational education program. However, some combination of labour market outcomes and learner outcomes seems to hold promise for developing measurable standards of performance (Imel, 1990). It is recommended that

'assessment of vocational courses should include written examinations as well as assessment of practical skills, independently set with marks externally verified (Fitz-Gibbon, 1996: 98). Illinois is pilot testing a system using six indicators for measuring outcomes: placement and continuing education, enrollment, employer satisfaction, student satisfaction, employability skills attainment, and cost (Asche, 1990). Apling (1989) says it is difficult to meet multiple standards and there is a problem of adjusting standards for programs in different labour markets or servicing different types of clients (p.18).

2.3.3   What and Whose Quality?

Quality is often referred to as a relative concept. There are two senses of relative. First, it is relative to the user of the term and the circumstances in which it is invoked. Second is the 'benchmark' relativism of quality. Some view quality in terms of absolutes and some judge it in terms of absolute thresholds that have to be exceeded to get a quality rating. In other conceptualisations, quality is seen as relative to the 'process' that results in the desired outcomes (Harvey and Green, 1993: 9).

Are we mainly concerned with the quality of inputs (human and physical resources), outputs (graduates) or the process of teaching and learning itself? The answer depends on who is making the judgement and for what purpose.

Socio-economic and technological changes lead to changes in quality concept of the product and service as well as statutory standards and requirements. To ensure that the graduates from the courses function in accordance with the new concept of quality of work and adaptability to ever changing regulations and requirements, higher vocational courses and curricula have to be flexible in providing the quality meeting the expectations and requirements of the profession and the

stakeholders. Familiarity with technology, system and changing social context are the skills among the 'core skills' suggested by Wolf (1991). He sees that these mentioned core-skills, are the learning requirements in vocational education and should be stated as outcomes.

2.3.4   Why the current concern about quality?

Concern about quality and standards is not new. However public interest in and concern about quality and standards has intensified. The reasons for this growing concern are the rapid expansion of student numbers against a backcloth of public expenditure; the general quest for better public services; the increase in competition within the educational 'market' for resources and students, and the tension between efficiency and quality (Green, 1994: 5). Another reason is simply the climate of opinion. Due to the very high cost of education, the only way is to get 'more for less'. Institutions should not only be more efficient, they should also be more responsive to the needs of their customers, and accountable to the taxpayers.

There are two related fears. First is the impact on standards of 'overcrowding', which puts pressure on student-staff ratios, equipments, library resources and space. Second is the impact on standards of 'dilution' in the quality of the intake – more means worse.

Implicit in the more intense competition between institutions is the risk that in the search for a greater share of student numbers and resources, quality will be sacrificed. To head off any criticism of declining academic standards requires the establishment of quality assessment units.

Quality in higher education is important because institutions must be accountable to society, employers, students and each other. Frazer (1992: 16-17)

describes the four reasons for the concern for quality in higher education as: value for money; effectiveness; transparent and open, and academic transfer and credit.

Interest in quality is also due to higher education's response to the demand for greater efficiency. Efficiency gains are achieved largely by changes in the approach to teaching and learning.

There is increasing demand for higher education. The number of places available has increased. To support the assertion "more does not mean worse" gives rise to the concern of quality.

Mass expansion of higher education would lead to many unemployed, underemployed, or misemployed graduates who are disillusioned and often focus on discontent. Employers complain about the inability of graduates to contribute to their enterprise. This leads to a demand from outsiders for the quality of courses to be exposed and from insiders for an urgent check and change, and to demonstrate the value of the courses.

Higher education institutions are required to expose and to explain to society at large what they are about and how well they are doing it. There is demand for better communications, nationally and internationally and more openness.

The lowering of national barriers by political change, massive increase in travel and the electronic communications revolution has had an effect on higher education. This has produced a need to understand the equivalencies of qualifications, the standards reached and the values to be attached to credit for something learned to be transferred to another country.

In summary, there has been an increasing pressure to make higher education more accountable in relation to the economy, more efficient and more effective. Concern over the quality of higher education has become an issue of public

interest. Any indicator or performance evaluation system always embodies value judgement about what is meant by quality and the desirable outcomes to be achieved and measured. The measurement of its quality depends on how one conceives its purpose and quality, which in turn determines the approach and criteria to be used for its assessment, and the outcomes that are to be measured and presented as evidence of excellence.

Hong Kong's higher education, including the higher vocational education, has undergone a period of drastic expansion in the last ten years. With such an ambitious pace of development and expansion, it has been found necessary to address the quality of education. 'More means worse' raises the concern whether quality is being sacrificed for quantity. Thus the quality of courses, quality of teaching and learning are of concern. The massive expansion in tertiary education raises the issue of accountability. Hong Kong Government has a responsibility to society ensuring that what it spends on higher education is acceptable and value for money. Thus the public has the expectation that the government will monitor the quality assurance in tertiary education institutions and maintain course standards.

"With much wider range of abilities at intake, effective learning can no longer be taken for granted, as it might have been twenty years ago in an elitist system. The much increased numbers in higher education translate into a correspondingly large public subvention of the sector, and it is natural that the community wishes to be re-assured that its money is well and effectively spent."

(Young, 1996: 2)

The recent uncovering of a number of serious construction incidents has exposed deficiencies in certain practices in the construction industry in Hong Kong. One of the areas of deficiency identified is that of the supervision of the construction work (Hong Kong SAR Government, 2001). This raises concern about the quality of the personnel – the technicians, performing the supervision work. Such concern is then followed by another concern about the quality of the technician courses that the higher vocational institutes are providing. In the report "Construct for Excellence", recommendation has been made to review the education and training of the technicians as well as the courses (ibid).

"Local tertiary institutions, in consultation with the professional institutions and others in the industry, should review and enhance the curricula of construction-related courses to facilitate the envisaged culture change in local construction."

(Hong Kong SAR Government, 2001: 87)

It is emphasised in the report "Construct for Excellence" (2001) that Hong Kong needs to build up a pool of competent and committed mid-stream personnel on whom project management can rely to achieve satisfactory built quality. To this end, it is important to enhance the professionalism of site supervisors (higher technicians) by strengthening their training arrangements (p.89).

2.3.5 Quality Assessment Approaches in Hong Kong Higher Vocational Education

As elsewhere, with the call for greater public accountability of funding, value-addedness and with the phenomenon that educational standards are falling in

Hong Kong, the Education Commission Report 3 (1988) remarked that 'the overall education standards of Hong Kong's tertiary students are worse than before.' (p.23). The need for quality management has gathered momentum. Quality initiatives have been implemented in all education sectors in Hong Kong: schools, vocational institutions and institutions of higher education. It is necessary to have an understanding of the local context of conceptualising and measuring the higher (vocational) education quality in Hong Kong. Such understanding could shed light on who controls quality, what processes are involved and how quality assurance is approached to take heed of the different conceptions of quality that different stakeholders prefer in Hong Kong's higher education.

The demand for a more highly qualified workforce and the loss of the middle management and professionals through emigration during the pre-1997 period of political uncertainty call for an expansion of higher education (Sensicle, 1992).

In 1989/90, only an equivalent to less than 9% of the relevant age group were able to receive higher education. In 1989 the Hong Kong government decided to expand the tertiary education with the aim of doubling the number of first degree intake by 1994/95. This is 18% of the age group, compared with 9% in 1989/90, and only 2% in the 1970s (UGC, 1996). Higher education at that time was criticized as maintaining an elitism whereby it was only accessible by a selected few (Cheng, 1996).

Having undergone a period of rapid expansion, Hong Kong's higher education has now come to a consolidated stage. There will be little or no growth in the next few years (UGC, 1996). No growth does not mean no change. Attention and effort will be shifted from quantity to quality. The higher education institutions in

Hong Kong, in common with institutions in many other parts of the world, have increased awareness of the importance of quality assurance.

As competition between institutions for students becomes much more severe in future, and when institutions are subject to increasing pressure for greater cost effectiveness and even cost reductions while maintaining and improving quality, much attention will be attracted to issues such as maintaining academic standards on financial accountability to the government.

The Hong Kong Government, in parallel with all the quality initiatives, has set up committees to oversee the provision of quality education since 1993 (ECR7, 1997). There were working groups on educational standards and on school funding. In December 1994, the report of the Working Group on Educational Standards was published. Then in April 1996, the Education Commission set up a Task Group on school quality and school funding to make recommendations. These eventually formed the basis of the Education Commission Report No.7 (ECR7) which consolidated the blue-print for implementing quality measures.

Measures recommended in the ECR7 include the use of quality indicators for measuring and monitoring school performance and value-added improvement in student performance in major domains of education. Specifically, the indicators should be used for self-evaluation and development. In other words, they are to enable schools to assess their own performance over time, and take appropriate steps for improvement. In addition, such indicators can also provide school profiles to teachers, parents, students and the community at large. Finally, they can enable comparison among schools of similar background or within the same quality circle.

Within a given framework, schools are required to establish their own indicators. Basically, these should consist of the school context and profile, process indicators, and output indicators.

The school context and profile should provide factual school data and vital statistics to reflect school characteristics, teacher characteristics, and student characteristics. Process indicators should serve as a useful checklist to reflect whether and to what extent schools have provided the right teaching and learning environment for the development of quality education. The areas that are monitored are: school culture and ethos; school-based management; teaching and learning process; personal growth and development of students; and liaison with external bodies. Output indicators should measure the value-added improvement of students in both academic and non-academic areas at different stages of learning, resulting from changes in factors affecting the student performance. Such factors include improvement in the teaching and learning environment.

Apart from the establishment of quality indicators, other recommendations of the Report are : setting goals and developing indicators; putting in place a quality assurance mechanism; providing funding flexibility; providing incentives to encourage quality school education; raising the professional standards of principals and teachers; and implementing related reforms.

One of the measures identified in the Report was the building of a quality culture. The key components of this are: to have clear and commonly accepted goals; to translate these goals into achievable standards; to have observable and measurable quality indicators for internal evaluation and external assessment; to allow schools more autonomy but at the same time hold them accountable for general administration, finance, and personnel matters; to have in place an efficient, equitable

and cost-effective funding system for meeting the basic needs of schools, and ensure that this funding system is related to performance; to provide incentives to recognize and encourage initiatives and the pursuit of excellence; to help and take measures regarding under-performing schools; to raise the professional standards of principals and teachers, and enhance their professional education and development; to introduce corresponding changes in the education-related executive and advisory structure, the curriculum, examination and academic system (ECR7, 1997).

There is criticism (Chan, Mok, Tse and Wilding, 1998) of the Report that it does not clearly address the weaknesses in the Hong Kong education system and how to remedy them. Instead, it bypasses this crucial issue by concerning itself with the internal workings of the school. In addition, Chan, Mok, Tse and Wilding, (1998) also point out that the Report's definition of quality is underdeveloped, unclear and inadequate. They further remark that, without a clear working definition and common understanding, there are potential difficulties in driving quality initiatives. Similar criticisms are raised about the approach to create a quality culture. The authors point out that, although the Report outlines approaches for achieving quality, it does not define what constitutes a quality culture.

In Hong Kong the rapid expansion and development of tertiary education has placed a lot of attention on quality management since the late 1980s. Hong Kong tertiary education institutions are self-accrediting. Thus the primary responsibility for quality assurance rests with the institutions themselves (UGC, 1996). This has also made the Hong Kong Government realise that there was a need to establish a Hong Kong system to advise and monitor its tertiary education. The continued reliance on an overseas organisation (CNAA) was considered no longer appropriate. The Hong

Kong Council of Academic Accreditation (HKCAA) came into being on 8th June, 1990 (Hong Kong Government 1987, 1989, 1990).

The remit of the HKCAA is to provide authoritative advice to the government on the standards of courses in tertiary institutions in Hong Kong. It carries out this task through academic accreditation, that is, by validating and revalidating any course conducted by institutions and by reviewing the general standards of institutions (Sensicle, 1992).

Judging from its remit, the HKCAA operates largely at the programme and institutional levels following a model of 'accreditation'. Accreditation determines whether an institution or a course meets threshold quality criteria (Massy, 1997).

For higher vocational education, it is quite common to have the course accredited by the relevant professional body, in particular, the professional level courses. The methodology of accreditation generally uses a combination of performance indicators, self-study and peer review. Performance indicators provide quantitative data on resources and performance. Self-studies represent an institution's evaluation of its own performance in relation to standards and its own particular aspirations based on both performance indicators and subjective factors. Peer review relies on the experience of outside experts who visit the campus and from their own opinions about performance in relation to standards (ibid).

Accreditation at course level aims to establish whether a course is equivalent to a level elsewhere and to examine it against criteria related to the standards and aims of the course (Hong Kong Government, 1990b). Course level accreditation is most common in professional fields. Accreditation at institutional level evaluates whether an institution's objectives are appropriate for the courses it

operates as well as implementation of the objectives. Institutional accreditation is most common for general undergraduate courses.

Accreditation assures stakeholders in higher education that minimum standards are being met and allows others who are not familiar with the institution to evaluate the efficacy of credits against a known baseline (Massy, 1997). Typical implementation questions include whether sufficient resources are available to meet the objectives and whether the resources are used effectively to produce the desired outcomes (ibid).

Teaching and learning quality-process reviews (TLQPRs) is one of the main quality-driven initiatives that has taken place in the tertiary sector since the mid-1990s to echo that teaching is a primary function of all tertiary institutions in Hong Kong (UGC, 1996). The focus of these reviews is the institutions' teaching and learning quality assurance processes, and the appropriateness and adequacy of these processes for actually maintaining and improving the quality of teaching and learning (Young, 1996).

In 1996, the University Grants Committee of Hong Kong (UGC) decided to undertake Teaching and Learning Quality Process Reviews (TLQPR) of institutions under its aegis. The reviews were not about assessing teaching and learning quality per se, but rather, 'were externally driven meta-analysis of internal quality assurance, assessment and improvement systems'. In other words, the reviews focused on the processes that are believed to produce quality and the methods by which institutions, faculties and departments assure themselves that quality has been attained' (Massy 1997 : 253).

These reviews are used to support funding decisions (Massy and French 1997). The emphasis on Teaching and Learning is clearly stressed in the UGC Report

on higher education in Hong Kong (UGC 1996). It states that the provision of high quality teaching must be the first function of every institution.

The goals of the TLQPRs are

"to focus attention on teaching and learning, to assist institutions in their efforts to improve teaching and learning quality, and to enable the HK UGC and the institutions to discharge their obligation to maintain accountability for quality."

(Massy, 1997: 255)

Major attention was given to the dimensions of curriculum design, pedagogical design, implementation quality, outcomes assessment, and resource provision. The review panel examined the various formal processes including internal validation processes, peer evaluation and assistance schemes, student evaluation schemes, and facilities for assisting teaching and learning.

Throughout the reviews, the TLQPR review panel found itself evaluating whether institutions embedded a strong culture of quality which they identified as having a strong sense of mission, strong leadership, a strong sense and coherent intellectual core, and empowerment at unit level (Massy and French, 1997).

On the whole, the reviews received positive feedback from the institutions. One important outcome of the exercise which has been echoed in the institutional reports is that the reviews help to heighten the awareness and development of an academic quality culture (ibid).

The UGC recognises that it is difficult to establish a set of quantitative indicators to measure the quality of teaching and learning in a higher education

setting. The introduction of an element of qualitative assessment, through inspections, peer review, visits, etc. may make such a process more meaningful (ibid).

In line with the argument 'good processes will produce quality results', the UGC has lately decided to undertake another kind of process review - management review. The UGC since early 1998, has started its first round of Management Reviews of the institutions (French, 1997b), to ensure that all the UGC-funded institutions have appropriate and effective processes to manage devolved funds and other resources in support of their institutional aims and objectives. The review covered all the management processes and systems in the areas of academic, administration, research administration, student support services, maintenance and estate development, IT, procurement, human resources and finance.

The reviews were not meant to prescribe methods to ensure value-for-money education as each institution had different histories, cultures and practices. In this regard, the reviews resembled the TLQPRs. They were qualitative in nature and sought to promote self-assessment and self-improvement within the institutions through dialogue, discussion and analysis of issues with the consultant and members of the Review Panels.

The Review Committee was cautious not to impose an uniform management style across different institutions. They were interested in seeking evidence of 'culture free' and 'operationally meaningful' (Massy, French and Thompson, 1999: 4) good management practices that could be applied across institutions. As a result of the Management Review initiatives, institutions have developed more conscious approaches to strategic planning and introduce changes in policies and structures to achieve strategic goals as well as developing closer linkages between resource allocation and strategic and operational planning (ibid). Thus the

Management Reviews focus on how to assist the institutions to enhance the quality of their management to achieve their objectives (French, 1997b).

Now in Hong Kong, with the proliferation of quality reviews that take place for different educational activities and at various levels, quality assurance has permeated almost every aspect of higher education. The mechanisms and processes involved have put the academic courses, institutions, the teaching and learning process and the management systems under constant review for quality. The Hong Kong Government through its UGC has introduced a range of quality assurance processes for a variety of purposes at both course and institutional levels. This system provides adequate means for the higher education system in Hong Kong to achieve the highest possible standards. This will make the higher education system become answerable to the various stakeholders who demand quality of a particular kind and prefer specific ways of how quality should be measured. To satisfy the various competing demands for quality as well as solving the conflicts inherent in it, comprehensive quality assurance policies might have to be established.

In any quality assurance system, there is tension between accountability and improvement goals. In higher education, the funding body has to monitor quality because of accountability to the public expenditure. Thus institutions have to follow the imposed systems and mechanisms. At the same time achieving the improvement goal of quality assurance has made the system quality-promoting and developmental-oriented, instead of concentrating on accountability and control.

Similarly, quality monitoring procedures are more likely to be seen as regulations to be reluctantly complied with and evaded where possible causing tension between academic autonomy and accountability. Williams (1990) says that quality could be better assured if those who deliver higher education services have a

sense of direct ownership of the quality assurance procedures both individually and institutionally.

The quality assurance process in higher education in Hong Kong is of self-improving assisted by peers - combining critical self-assessment with peer review. Decisions with respect to quality dimensions have to be made by the institutions themselves. Variety among and within institutions is necessary for an effective tertiary sector (Massy, 1997). Young (1996) says that it is the UGC's intention that the quality process reviews be seen genuinely as a collegial and supportive effort, rather than as a threatening or confrontational exercise.

From the above discussions, it emerges that the quality assurance policies in higher education in Hong Kong have to take a pragmatic approach that aims to harness the different quality expectations and approaches to achieve the dual purposes of assuring and improving quality. Thus the quality assurance policies are greatly influenced by the needs to balance the contested voices of stakeholders and to ease the tensions that exist between accountability and improvement and between accountability and institutional autonomy.

These quality monitoring and performance evaluation systems and approaches are primarily institutional based. None of these approaches have delved deeply into the value-addedness of students in higher education, both in terms of intellectual and personal development. These institutional and developmental based approaches do represent the different conceptions of quality giving different ways of measuring and assessing quality in higher education, though Barnett (1992) describes them as 'contrasting'.

"It is entirely possible and proper to be concerned with both institutional performance and the character of the individual student's development. Though they have different interests, yet can be met on different levels by appropriate forms of action and evaluation. Institutional managers and national bodies have a legitimate interest in institutional performance as such, while course tutors and staff operating in teaching situations should have a continuing interest in the quality of the students' learning."

(Barnett, 1992: 199)

Thus the challenge for the development of any quality assessment system is to deal with accountability, with improvement, value-addedness of student and institutional performance. In view of this, there is need for an approach that could be able to satisfy the various concepts for quality assessment in higher vocational education that an alternative perspective is suggested. The alternative perspective is premised on the concept of quality as learning impact, which on one hand measures the amount of growth and development in students as they experience tertiary education to satisfy the need for tertiary institutions to be answerable for the effect they have made on students, and on the other hand provide improvement information for the institution administrators and curriculum developers to shed light on policies and practices that make up the institutional environment.

It is this approach and the conceptual model it offers that guides the conceptualisations of quality and its assessment of higher vocational education programmes for this thesis, and underlies the major research concern of what students have learned from the course and to what extent that can be attributed to their college experience and other related factors.

2.4   Summary

This chapter has reviewed the various writings and positions on the question of quality in education, particularly as it applies to vocational education of higher technicians. Account has been given of the current situation in Hong Kong education, and of the demands for proper accountability and assessment not only of the institutional performance but of course improvement and of students' learning development. In particular, attention has focused on the development of quality assessment systems, policy and management, and how these may impact on both the educational institution and on the students.

Chapter Three   Methodology

3.1   Introduction

This chapter presents the methodology for the research work on which this study on the quality of vocational education for higher technicians is based. The research work had to cover a number of disparate factors, in order to ensure that all relevant and significant sources would be fully attended to. The courses for the vocational education needed to be assessed from different perspectives and at different levels. The diverse number of service consumers, the variety of stakeholders in the operation, and the complexity of structures are all significant features in the maintenance and operations of the course. At the same time, it is clear that the best contributors to the research work would be those people personally involved, especially those in the front line, namely the students, the teaching staff, employers of graduates, and the graduates themselves. Thus, separate questionnaires were targeted at each of these groups. A study plan backed by a sound research design, and a set of coordinated procedures was drawn up in order to reach the objectives of the study. In association with the survey on perceptions of the quality of the course, a study was also made on the effect of pre-entry qualifications on the performance of the course, as well as on the evolutionary development of the curriculum. Reasons for this latter are that entry qualifications are a factor in the quality of the course input which is one of the factors to be considered in formulating the course curriculum. The course curriculum, which throws a heavy weight on both teaching and learning, contributes a major influence on the quality of the course outcome. To substantiate the quality of 'fitness-for-purpose', the outcome quality has to fit in with ongoing economic,

technical and social changes. Thus the course curriculum has to keep in pace with these changes. It was felt helpful to probe into the evolution of curriculum developments. In this chapter there is first a presentation of theoretical concepts concerning social science research, concepts of survey, of questionnaires and of interview, as well as discussion of rating scales for a questionnaire. Next, the survey design is described; and this is followed by a more detailed account of the actual process of the survey in this research. A pilot study was done, and its process and outcome are presented. Account is also given of further corroborative investigation, in the form of group discussions and interviews following the questionnaire survey. Consultation of archival documents and records is noted, as is consultation of examiners' reports and various relevant College boards and policy papers concerning quality. The final section of the chapter describes the actual process and operation of the research survey and the collation of results.

3.2   Theoretical Concepts

In social science research, there are many methods of data collection. Each has advantages and disadvantages. The choice lies on the appropriateness to the purpose of the research and to the means at the researcher's disposal.

A questionnaire has a job to do. Its function is data collection. It is an important instrument of research, a tool for data collection. It should not be some sort of official form or a set of questions, which has been casually jotted down without much thought (Oppenheim, 1992 : 100). The term 'questionnaire' could be used in different ways. Some researchers define the term exclusively for self-administered and postal questionnaires, while others would include face-to-face or telephone interviews. In a different way the word 'questionnaire' is sometimes used to

distinguish a set of questions from a more rigidly constructed scales or tests. What is the questionnaire to measure? It follows directly from the operational statement of the issues to be investigated and from the research design that has been adopted. It takes many weeks of planning, reading, design and exploratory pilot work to determine the specification for a questionnaire. The detailed specification should be precisely and logically related to the aims of the overall research plan and objectives.

3.2.1   The Concept of Survey

Oppenheim (1992) says that each survey has its own particular problems and it is possible to present some general considerations that have to be borne in mind about which decisions will have to be made. The decisions are : -

- the type of data collection instruments needed to meet the specific objectives of the survey;

- the size of the survey;

- the population upon which the survey is focused;

- the method of approach to respondents to be used;

- the constraints (financial resources and time) to be faced;

- the build-up of question sequences within the questionnaire;

- the type of question to be used: e.g. 'closed' questions with pre-coded answer categories versus free-response questions.

3.2.2   The Concept of Questionnaire

The term 'questionnaire' as used here is fairly loose to cover questionnaires distributed by hand and postal, group or self-administered ones.

The questions asked are either 'open' or 'closed. A closed question offers the respondents a choice of alternative replies, by ticking or underlining their chosen answer(s) in a written questionnaire. They are easier and quicker to answer. They require no writing and quantification is straightforward. Disadvantage is the lack of spontaneity and expressiveness. Closed questions are cruder and less subtle than open ones. The opportunity to probe is lost and so is the rapport.

Open questions are not followed by any kind of choice and the answers have to be recorded in full. They have the advantage of freedom given to the respondents, who can let their thoughts roam freely, unencumbered by a prepared set of replies. The respondents' ideas are obtained in their own language, expressed spontaneously, and this spontaneity is often extremely worthwhile as a basis for new hypotheses. It is easy to ask free-response questions but difficult to answer and still more difficult to analyse (Oppenheim, 1992 : 113).

An ideal questionnaire possesses the same properties as a good law (Cohen and Manion, 1994 : 92). A questionnaire has to be clear, unambiguous and uniformly workable. Its design must minimize potential errors from the respondent .... and coders. And since people's participation in surveys is voluntary, a questionnaire has to help in engaging their interest, encouraging their co-operation, and eliciting answers as close as possible to the truth (Davidson, 1970).

The pitfalls in question construction identified by Cohen and Manion (1994 : 93) could be taken as the rule of thumb in designing questions for a questionnaire. It must avoid leading, highbrow, complex and irritating questions and using negatives. Contents of the questionnaire have to be arranged for 'maximizing co-operation' (Cohen and Manion, 1994 : 96). The questionnaire must look easy and attractive with clarity of wording and simplicity of design .It is found that clear

instructions guide respondents and invite participation, whereas complicated instructions and complex procedures intimidate respondents (Cohen and Manion, 1994: 96). Cohen and Manion (1994) suggest that initial questions should be simple and have high interest value so as to encourage participation. The middle section of the questionnaire could contain difficult questions and the last few questions should be of high interest in order to encourage respondents to return the completed schedule. According to Oppenheim (1992 : 102), the main advantages of postal and self-administered questionnaires are : -

- low cost of data collection;

- low cost of processing;

- avoidance of interviewer bias;

- ability to reach respondents who live at widely dispersed addresses.

The main disadvantages of postal and self-administered questionnaires are:-

- low response rate and consequent biases;

- unsuitability for respondents of poor literacy; the visually handicapped, very old or children below the age of say, ten; and people with language difficulties;

- no opportunity to correct misunderstandings or to probe, or to offer explanations to help;

- no control over the order in which questions are answered, no check on incomplete responses, incomplete questionnaires or the passing on of questionnaires to others;

- no opportunity to collect ratings or assessments based on observation.

3.2.3   Rating Scales of Questionnaire

It is also important to determine the appropriate sort of rating scales in addition to the logical aspects of question design and statistical approaches to score processing. It is understood that rating scales are not easy to design. Efforts and care are needed to check that every value on each rating scale makes sense when applied to the question stem. The scale being used has to genuinely reflect the question being asked and not be substituting for another.

The rating scale has three basic functions. The first function is to provide a number of possible answers to a question. That means a good questionnaire should conform to some of the basic rules of conversation. The second function is to restrict the conversation and focus on just those areas relevant to the research being conducted. The third is to force all respondents to use the same set of words (or numbers) in their answers, making generalisations within and between groups of respondents. (Low, 1988 : 69-70). The focusing and standardising functions have a number of implications for the design of good rating scales. Firstly, any data from a question open to multiple interpretations by the respondents is itself uninterpretable. A good question and its answer are thus unambiguous. Secondly, it implies that all values, or points, on a rating scale should describe the same dimension. Also, the statistical procedures that the researcher intends to use require the values to be at equal intervals along the scale. Hence, under these three requirements for good rating scales, natural language is likely to be far from ideal in situations involving the precision, lack of ambiguity and clearly defined word boundaries. This makes the construction of good verbal rating scales a very difficult procedure.

The rating scale used in most of the questionnaires of this research is the 'bipolar' type. This type of scale involves two sides, which are mirror images of each

other in all but one feature. It could be described as a 'mirror image' scale. This type of scale allows the possibility of a point in the middle and gives rise to the question of how to label the 'midpoint'. Falling in the centre may well be completely unconnected with an inability to decide. It could also suggest the midpoint not be labeled as 'no objection' or 'don't know'? It is also found that on a Likert scale of 1 to 5, respondents tend to choose '3' as their response. This only neutralises the mean score and makes the overall responses seem more ambivalent than they should. In view of this experience and comments on scaling uncertainty, a 4-point scale (Low, 1988 : 71) is adopted in most of the questions in this research.

"It is demonstrated that interviews are found appropriate when we need to ask open-ended questions, or open-ended probes and where interviewer has to record verbatim the answer given by the respondents. Such open-ended questions are important in allowing the respondents to say what they think and to do so with greater richness and spontaneity".

(Oppenheim, 1992 : 81).

3.2.4   The Concept of Interview

Interview is the mirror image of the advantages and disadvantages of questionnaires (Oppenheim,1992: 102). The interview can supplement the questionnaires. An interview requires interpersonal skills of a high order. It is not an ordinary conversation and it is a one-way process. If it becomes a two-way process of communication, it will lose much of its value because of the biases introduced by the interviewer.

There are advantages and disadvantages of using interview in data collection. According to Oppenheim (1992) the advantages of interview are : -

- high response rates and good quality;

- less misunderstanding;

- good control over sequence of answers;

- high validity;

and the disadvantages are : -

- expensive;

- time-consuming;

- interviewer's bias;

- affected by ethical considerations.

Due to factors of expenses, time and accessibility, it is not always possible or practical to obtain measures from a population. It is more appropriate to collect information from a smaller group or subset of the population in such a way that the information gained is representative of the total population under study, that is by sampling. Unless the total population can be identified in advance, it is virtually impossible to assess how representative the drawn sample is.

Exact representation is usually not necessary, but it needs a good spread of respondent characteristics so that we can tap probable respondents of every kind and background. It is also good to conduct 'depth interviews' with 'key informants' such as college managerial staff, directorate staff of the employers and graduates who have gone for further study.

Interviews are considered important as the study is about human affairs.

"Human affairs should be reported and interpreted through the eyes of specific interviewees and that well-informed respondents can provide shortcuts to the prior history of the situation, helping the researcher to identify other relevant sources of evidence."

(Yin, 1994)

Cohen and Manion (1994) and Seidman (1991) also point out the usefulness of interviews in gaining an in-depth perspective of the situation.

"The interview can yield rich material and can often put flesh onto the bones of questionnaire responses."

(Bell, 1987: 70)

Interview only involves the interviewee and the interviewer. It has a privacy atmosphere. Thus participants who are shy or feel embarrassed about raising certain points in the group discussion, now have the chance to speak and ask. These participants were identified through their eyes and expressions during the discussion.

Depth interviews are costly and time-consuming. There are extraneous pressures to reduce the numbers to a minimum. But quality, rather than quantity, should be the essential determinant of numbers. The job of the depth interview is ideas collection, not data collection. The primary objective is to maintain spontaneity and richness.

Despite the practical advantages and generalizability of research findings afforded by quantitative research measures, quantitative research as a whole is not free from criticism. Mertens (1998) points out that surveys rely on individuals' self-reports of their knowledge, attitudes or behaviours. Thus, the validity of the information is contingent on the honesty of the respondent. Ions (1977) argues that the effect of quantitative methods is depersonalization since it represents a form of collectivism.

Notwithstanding these criticisms, however, the researcher's survey results are from different sources, including those from qualitative measures – documentary analysis, interviews and discussions.

3.3   Survey Design

In this research, a multi-method approach was used to collect data from various sources. The approach comprised a survey of the principal stakeholders' views by questionnaires, group discussions, interviews with key informants, and archival search of records and relevant documents. The flow chart of the survey shown in Chart 3.1 at the end of this chapter shows the complete picture of the entire survey. It lists out the details of the chronological procedures of each activity of the research. It is a diagrammatic representation of the steps taken in the survey. Through these data collection methods, quantitative as well as qualitative data were made available to provide both the breadth and depth required for the study of the quality of the technician course. This multi-method data collection approach is a way of triangulation providing multiple measures of the same phenomenon and evidence from different sources. Thus the potential problems of construct validity could be addressed.

"A single source of data must always be to some extent suspect, and that every effort must be made, with the research resources available, to check the accuracy of data by using a combination of research tools."

(Johnson and Ransom, 1994: 161-162)

In this research, after the questionnaire survey, 'check' interviews were conducted and group discussions were also arranged with the principal stakeholders of the course. Thus multiple measures of the same phenomenon and evidence from different sources were obtained serving as a triangulation on the validity of the survey. Details of the group discussions and interviews are discussed in sections 3.2 and 3.3 of this chapter.

3.3.1   The Questionnaire Survey

3.3.1.1   Target Respondents

Mertens (1998) says that surveys are useful because they allow for data to be collected from a large number of people. In this research, the questionnaire survey, a quantitative approach, which was conducted with the principal stakeholders of the course makes it possible to draw a collective profile of the quality of the course.

Who are the target respondents of the survey? Five categories of respondents were identified as capable of providing relevant information for the research. These include : -

- Students who are attending the course.

- Teaching staff who are involved with the course.

- Employers and potential employers who employ the graduates.

- Graduates who are :   (i)   in employment;

                                      (ii)   in further study.

3.3.1.2   Sampling and Selection Criteria of Respondents

As seen above, there is considerable variety in the list of relevant respondents for the study. To obtain data representation and search for insights at greater depth, different strategies were used to solicit information from different categories of respondents. In this research, 'cluster' and 'purposive' sampling as well as 'population' were adopted for the identified target respondent groups.

(i)   Student Respondents

Since there were, are and will be students in the past, present and future, it is impossible to survey the whole population of student in the course. Therefore a random selection of a specific number of cohorts of students was made and all in the selected cohorts were tested. Thus 'cluster' sample for the category of student respondents was employed. Two cohorts of students, who were attending the course, were surveyed. They were in the final year of study at the moment of survey, and had gone through all stages of the course. They were considered the ones that could contribute the most about the course from the perspective of the customers of the course. One of these cohorts was surveyed twice, i.e. when they were in stage two and again when they were in their final stage of study. The purpose was to see if the students would have different views at different stages of study and make changes with maturity. In this survey, 33% of the total intake population of students of the course since its operation was sampled. Selecting the samples in this way would

make the research manageable and able to be completed within reasonable duration of time.

(ii)   Graduate Respondents

The category of graduates was divided into two sub-categories. One was the graduates who were in employment, i.e. those who were working in the profession. The department used to do surveys on the graduates' employment. Due to data protection regulations, the information obtained through that channel cannot be used for this study. The graduates' contact information was obtained through personal contacts by the researcher with the graduates as well as the employers. The initial contact was made during the 'graduation reception' at which almost all graduates of that year were present. Having got the graduates' contact phone number, the researcher made further personal contacts with them. A total of 132 graduates in employment were contacted. This represented 23.6% of the total population of graduates from the course. Most of them were graduated from 1999. The graduates from previous years were difficult to trace and only some could be contacted through their employers. The other sub-category was those pursuing further study. They were either studying part-time, i.e. still in employment or full-time in local institutions. The survey on this category was confined to those graduates studying in a local university which had admitted a significant number of the graduates from this technician course to their degree programmes. The students studying in these degree courses were graduated from different years of the technician course. They were identified through the help of the staff of this local university. Though there are cases studying in overseas, there is no record or information to access them. 75

questionnaires were sent out to the graduates who were pursuing further study in the local university.

(iii)   Academic Staff Respondents

For the academic staff, all those involved in the teaching of the course were surveyed. This happened to cover the entire academic staff of the department, i.e. a full population survey in this category. This covered all grades of staff, contributing opinions from all levels of academic staff.

(iv)   Employers Respondents

The Department have regular contact with a list of firms. There are also firms that have a record of employing our graduates in their workforce. Most of the firms in both lists overlap. Respondents in the category of employers were those from these lists, covering government departments, quasi-government organisations, consultants and contractors in the profession. Altogether, 120 firms were included in the survey.

3.3.1.3   Preparation of the Questionnaires

The literature review enlightens the quality concept of academic programmes. The review provides an initial 'feel for the problem' (Oppenheim, 1992) and throws up ideas for making decisions about the direction of the research, the aims, the type of information needed and the approach to adopt (Mertens, 1998; Cohen and Manion, 1994; Clegg, 1990; Oppenheim, 1992). Questionnaires were subsequently designed, based on the following concepts of quality as :-

- exceptional;
- perfection;

- fitness for purposes;

- value for money;

- transformation.

The questions in the questionnaires were prepared and grouped in such way that the answers could contribute to the quality input and outcome measures which were the contributors to compliance, diagnostic and performance monitoring. These monitorings are, in essence, approaches of quality control.

All the target respondents were given a questionnaire to collect their views and opinions about the course. As different categories of respondents have different perspectives on the course, one specific questionnaire was constructed for each category of respondents. Moreover, there are several basic components that these different questionnaires have in common. These include sections concerning the stake-holders' image, merits and demerits, evaluation and career prospects for the graduates of the course. The questionnaires in this research are designed with 'closed' questions. To prevent the respondents answering blindly without reading the questions, the rating scale arrangement is intentionally not consistent. Some questions have the rating scale in ascending order from left to right while others are from right to left. Some people have the habit of ticking the answers blindly and lean on one side of the scale. To eliminate this and try to get a valid response, two versions of the questionnaires were prepared by interchanging the sequence and order of the answer choice. For example, ticking "A" for a question in version 1 of the questionnaire means "excellent" while the "A" answer for version 2 of the questionnaire would mean "worst". Equal number of both versions of the

questionnaires were randomly distributed to the respondents in all categories. Independent data input and editing were done for each version.

Questionnaires to students were to survey their views and opinions on the course. This covers the teaching and learning aspects as well as the supports and facilities from the college. Although this is a subjective view, yet it is a statistical assessment. It will supplement the objective view -- examination results. This questionnaire is divided into six sections covering questions on students' background, ability, effort, comments on the course and the college, and opinion on IT teaching. There is a total of thirty questions in this section. It also asks the students' opinion on teacher's teaching skill and approach.

Questionnaires to the graduates are used to survey the graduates' view/opinion on the course, particularly the effect and usefulness of the course to their employment. It also extended to survey those graduates proceeding onto further study, investigating how the technician course underpin their further studies. Situation of employment, remuneration and nature of work that the graduates get and receive reflect the quality of the course. Questions covering these topics are essential. Popularity of the course, to some extent, also demonstrates the quality of the course. This questionnaire has five sections covering questions on graduates' employment details, further study situations and comment on the course. It contains forty three questions. With the same argument as described above, two versions of the questionnaire were prepared in the same way as that for the student questionnaires. This questionnaire was meant to cover graduates in employment as well as those in further study. It was sent out by post. It is a postal questionnaire survey and the expected response rate may not be high though the target respondents were identified.

Questionnaires to employers were meant to survey their views/opinions on the performance of the graduates in their employment, and the extent to which the graduates meet the employers' expectations and satisfaction. The objective of surveying this group of respondents is to investigate the employment outcome of the course. It probes the employer's view of the ability and performance of the graduates reflecting the practicality and employability of the graduates from the course. Information obtained will provide a very good clue and direction in improving the course to meet employment demand and expectations. The questionnaire starts with questions concerning the details and background of employment, nature of work involved and stability of employment. There are also questions on the technical proficiency and general attributes of employees (our graduates). It does contain questions about employers' view on the level, standard, practicality, appropriateness, quality of the course and the ISO 9000 management system. There are altogether forty seven questions in the questionnaire. As in the above two types of questionnaires, this questionnaire also has two versions.

Teaching staff are the front-line manager in delivering the course. What and how it is delivered, are the essential items to cover on course quality. Efficiency and effectiveness of the delivery are also of great concern and have to be looked into. Teaching staff's questionnaires have to probe into these areas to identify the quality of teaching and learning. This may vary in different subjects. Thus the survey has to extend into every subject of the course, providing a review on the validity of the subject in the course. Thus the main theme of the questions in teaching staff's questionnaire is to survey the teachers' view on the subjects and the course they are teaching. The questions are to identify the relevancy and level of the syllabus and the subjects; the teaching and learning of the students and their academic performance. It

is equally important to know the feeling of the teachers on the composition of the teaching, viz. lecture, tutorial and practical.

With the rise of information technology, there is a trend to use an IT approach in teaching. Opinion and the ability of teachers in keeping up with this trend is worth knowing. ISO 9000, which is a commonly adopted management system in commercial, manufacturing and government managements, is one of the quality management systems. There was a suggestion to ask academic institutions to adopt this system in their management operation. It would be interesting to include questions on this topic to get some idea of how the teachers react to this suggestion. This questionnaire is divided into two parts. The first part is to survey the staff's view on the subject(s) they are teaching while the second part probes into the staff's view on the course as a whole. Questions in the first part concentrate on the relevancy of the subject and syllabus, contact hours and the usefulness of different components of lectures. It also contains questions on the use of teaching aids and methods of delivery. The second part has questions on the relevancy of the course curriculum to the industry and the profession. It also raises questions for comment on IT teaching as well as the ISO 9000 quality management system. The final section contains questions looking for opinions on workload, working conditions, college and computer facilities, staff development and support from senior management. The entire questionnaire has sixty nine questions. The response to the questionnaires is not anonymous because an interview as a check to this questionnaire survey will be conducted afterwards. However the survey data are treated in strict confidence and are solely used for the research. The questionnaires for all categories of respondents are attached in Appendix A.

3.3.1.4 Pilot Study

Questionnaires do not emerge fully-fledged. Every aspect of a survey has to be tried out beforehand to make sure that it works as intended (Oppenheim, 1992). Pilot study of the questionnaires started in March, 1999. The purpose was to minimise ambiguity of the measuring of the questions; to optimize the kind and number of relevant questions; to test the appropriateness of the format; to analyse the results and to take heed of any issues that could be further explored in the interviews and discussions. The value of pilot work should not be underestimated. The pilot survey participants were requested to respond the pilot questionnaire as well as to make comment on the questions.

"Piloting can help us not only with the wording of questions but also with procedural matters such as the design of a letter of introduction, the ordering of question sequences and the reduction of non-response rates. We should realise from the beginning that pilot work is expensive and time-consuming, but avoiding or skimping on pilot work is likely to prove more costly still."

(Oppenheim, 1992 : 47)

Judgement sampling in pilot survey was carried out in this exercise. A total of 28 pilot survey questionnaires were sent to all categories of respondents in the following manner :-

- 10 questionnaires to students of second and final years.

- 8 questionnaires to graduates in employment and in further study.

- 5 questionnaires to employers.

- 5 questionnaires to lecturers and senior lecturers.

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The rationale for selecting this sampling population for the pilot study was that it covered all categories of target respondents. So all types of specific questionnaires would have been tried out, tested, commented on and able to serve the purposes of the pilot study. At the time of entering data (about 3-weeks after the despatch of the questionnaires), 23 valid questionnaires were returned. After the cut-off date, other returned questionnaires were not taken into account.

Since the objective was mainly to understand the general pattern of responses and to test the reliability and validity of the questions, correlational analysis of individual variables was left to the actual study.

Piloting Outcomes

In the pilot study, there were comments and findings that were worth considering which led to amendments of the questionnaires before being used in the main survey. Details of the amendments, as well as the reasons for not making amendment to certain findings, from the pilot study, are described in the following sections (a) to (d).

(a)   Employer Questionnaire

There were two suggestions from the pilot survey. The suggestions concerned question 27 and 28. There was a remark from the pilot survey that the graduates did not study 'Putonghua' at the time when they were in school. It was felt inappropriate to ask question 27. After re-consideration, the researcher considered that the question was not confined to asking what they had studied. It was a general survey of their language skill in "Putonghua". Also in view of the social change after the change of sovereignty in 1997, it was found that 'Putonghua' was very popular as

well as a need. It would be interesting to see how good in Putonghua was the staff in the organisation. Thus it was decided to keep this question.

Similar to Q27, there was the remark that almost all people in Hong Kong can speak Cantonese. It appeared redundant to ask this question. However, it was found some people coming from overseas could not speak Cantonese. Also, after the change of sovereignty, there was significant increase in people, coming to work in Hong Kong from the northern part of China who could not speak Cantonese. It was found helpful if there was information on this situation. Thus the question was kept.

(b)   Graduate Questionnaire

It was also pointed out by the graduates that 'Putonghua' was not taught at the time when they were studying. It was proposed to delete. However, due to social change, 'Putonghua' has gained significant importance in society and there is getting more people who only speak 'Putonghua'. It is good to have some idea about the level of achievement of the graduates in 'Putonghua'. Thus it was decided to keep the question 28.

It was commented that the graduates to be surveyed were from this course and so recommendation was made to omit the information on 'course of graduation'. There was another comment on the question asking information on sex of the respondent. After re-consideration, this information was not considered of prime importance to this research. It was decided to delete this question in the main survey. The phrase 'a part-time course' in question 5 was considered not clear. So it was re-worded as 'a further study programme'.

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Question 39 was pointed out repeating question 10. It was decided to delete question 39. So the numbering of the questions following this was amended accordingly.

In question 42, the answer box E was considered misleading. Thus this box was deleted and the answer given would be in line with the purpose of the question.

(c)   *Staff Questionnaire*

From the pilot survey, it was found necessary to derive a mechanism to analyse the data received for questions 12 and 13. It was decided to categorise the data into five time slots. The number of staff falling into different time slots was recorded and the corresponding percentages were then calculated. The time slots were :-

A: less than 2 hours;   B: 2 to less than 4 hours;   C: 4 to less than 6 hours;

D: 6 to 8 hours   E: more than 8 hours.

It was considered the filling in of simple answers, x hours per week would be easy for the respondents. Thus it was decided not to make any change to these questions. But in doing the analysis, the above-described approach would be made.

The answering boxes for question 17 were not labelled. So the labels 'A'; 'B'; 'C'; 'D' and 'E' were added to each of the answering boxes. Similar to questions 12 & 13, the analysis had to be done under different categories of teaching aids. A record of the number of staff using a category of teaching aid was made and the percentage of staff using it was calculated.

Question 55 was considered not clear. The phrase 'in quality teaching' was added after the word 'support .....'.

In the college, most staff are involved in evening teaching of part-time courses. The evening teaching is considered by management as 'outside' work. To avoid misleading feedback and to ensure getting the proper answers to meet the aim of the question, the phrase 'apart from evening teaching' was added after the word '..... outside work' in question 64.

The same action as for questions 12 & 13 had to be taken in analysing the data received for question 69. The question was not amended, based on the same argument as given for questions 12 & 13. The time ranges adopted were :-

A: less than 5 hours;   B: 5 hours to 9.9 hours;   C: 10 hours to 14.9 hours;

D: 15 hours to 20 hours;   E: over 20 hours.

(d)   Student Questionnaire

There was no particular issue brought up during the pilot survey for this questionnaire. It was also considered not necessary to make changes to this questionnaire in the main survey.

For easy reference, the amendments made to the pilot study questionnaires as discussed above are printed in green italics font. Words and phrases that have to be deleted are crossed out in green. The pilot study questionnaires, with amendments identified in this style, are attached in Appendix B.

3.3.2   Group Discussion

The major issues of quality of the course could be identified from the views and feedback of the stakeholders – students, graduates, staff and employers, through the questionnaire survey. To strengthen these views and opinions, further probing into the comments, criticisms and suggestions on the course was undertaken

by a series of discussions and interviews to establish an in-depth view and idea of improvement and changes. Some of the questionnaire respondents were invited to join in the group discussion to express their views at greater length. This is an alternative approach in collecting the views and opinions on the course in a relaxed discussion atmosphere. Each discussion group consists of members from different categories of respondents. Category of participants was grouped in such way that the topics of discussion would be of greater interest to them. The form was an open discussion in which contributions could be thrown in freely. The contents and findings of the discussion provide the basis for corroborating and augmenting with evidence collected through other research approaches. Guideline for these group discussions was drawn up to stimulate exchange of ideas and facilitate expression of opinions that could not be elicited at full length by the questionnaire. The guideline is appended in Appendix C.

There were two discussion groups. The first group involved the employers, the graduates and staff of the local institute that graduates had entered for further study. They were seen as the product customers of the course. The topics discussed were concentrated on the 'quality of product' and the 'fitness for purpose'. Invitation letters were sent to the employers, graduates and the staff teaching the part-time degree programme in the local university. The other group was participated by students, staff, external examiners and members of the departmental advisory board. Invitation letters were also sent to them. Students and staff are viewed as the course users and providers. The discussion of the second group looked into the curriculum, teaching and learning process, college quality policy, supports and facilities. One meeting was held for each group.

From the analysis of the data of the questionnaire survey, there was no particular issue requiring special attention nor misunderstanding was spotted. Thus no particular respondent has to be identified and be invited to join the interview or discussion to make further contribution on the course. Thus the interviewees and discussion participants were chosen randomly in the following manner.

A.   Students

A total of 12 students were chosen for the interview and discussion. To have a wider mix of opinion, 3 were chosen from those studying year 2 and 9 were chosen from year 3. There is a class list in alphabetical order of their surnames. Those, who are the tenths on the list were picked. The first and last ones that picked were invited to attend the interview, while the others were invited to the discussion.

B.   Graduates

A list in alphabetical order of surnames of those graduates that responded the survey was prepared. A total of 8 graduates were chosen, from the list in the same way as that of the students, and were invited to the interview and the discussion.

C   Academic staff

Five academic staff have to be chosen for this activity. The academic staff, irrespective of their rank, were listed in alphabetical order of their surnames. Every fifth one on the list was picked.

3.3.3 Interviews

Apart from the above-described instruments, the third one used in this research was interviews. The objective of the interviews was to provide a 'check' and to achieve the following:-

- In-depth probing.

- Clarification of doubtful and contradictory points.

- Random check of the response to the questionnaires.

Schedules were drawn up to guide the meetings with the interviewees of all categories based on the outcome and findings from the response to the questionnaires and the group discussions. These schedules had no fixed format and they were largely composed of open-ended questions to solicit opinions on issues of significant concerns on the quality of the course and to clarify the doubtful points, if there was any. More open questions, unlike those in the questionnaires were asked with the objective of getting more fresh idea and comments to flow in. The intention was to create an open discussion atmosphere, so that interviewees felt the freedom to speak. Such freedom of discussion could lead to areas of discussion that might not have been thought of and would formulate a useful feedback to the quality measure of the course. Thus the interview was a way of strengthening the analysis and findings of the questionnaires, giving a stronger validity to the survey. A guideline of discussion was prepared for the interview. It was used as a facilitator, rather than following it strictly. The discussion guideline is attached in Appendix C.

The interview was piloted with two interviewees to check the validity of the questions and to gain practice in asking questions and recording the responses. These two pilot-interviewees were a staff at lecturer level and the student-

representative of the final year class The results showed that most questions were able to elicit the type of information intended, except that certain questions needed to be broken down during the interviews. In other words, the questions could not be asked or discussed at one go. They had to be asked or discussed in parts and narrowed down to more specific points. For example, in questions such as 'what's your view on the quality of the course?', it had to be discussed with respect to standard, employability and acceptability. From the student interviewee, it was found that he was reluctant to discuss the teaching approach by referring to specific subjects, avoiding to touch on making comment on specific lecturer. This was a very important and useful finding to alert the researcher in the formal interview. The student also indicated that he had limited knowledge about the proposed educational changes in Hong Kong. Thus he could not make contribution on the impact of the proposed changes to the course. He also showed that he had no idea about the management of the course. Thus these two questions were not raised in the formal interview. The experience and practice gained in this pilot study could apply equally well to the group discussion.

3.3.4   Archival Documents and Records

Statistical records, student files, policy documents, annual reports, meeting minutes and instructions concerning the course and the course document of similar course in other institutions were obtained and studied. Relevant information could thus be made available for processing.

The strength of documentary analysis is that it involves low cost, brings together previously unrelated materials to illuminate a topic, enables access into the past in a way that no other method can, and increases knowledge on topics by

bringing materials to light which have not previously had wide circulation. It is an unobtrusive part of a triangulation process.

3.3.4.1   Effect of Pre-Entry Qualification

The course was designed for Form 5 school leavers. The admission criteria is five passes in the HKCEE including English, Mathematics and Physics or Engineering Science. It was found that quite a significant proportion of students admitted possessed qualifications above the minimum. Would the better students perform well? Is it a waste of time asking this batch of 'better' students to join the first year? Could they be admitted directly into the second year of the course? Or should the course be designed for Form 7 entry? Before we try to answer these questions, it would be useful to study the effect of the pre-qualifications on the performance of the course. The pre-entry qualifications of the admitted students were retrieved from the admission records. The academic records of five cohorts (1993 – 1997 intakes) of students were retrieved from the record files and analysed. These are the only cohorts of students that had completed the course at the time of the survey. 't-test' and Winer's combined tests were used to do the analysis. Details of the test and the findings are described in the next chapter.

3.3.4.2   Evolutionary Changes of the Course Curriculum

Training of construction technicians and supervisors in Hong Kong in the past years has been relying on the relevant Higher Diploma course initially offered by technical college and then by tertiary education institutions including universities and vocational education institutes. Throughout the years, the curricula of the course have been revised many times to suit changes in policy and the need of society. After

having been in operation for such a long time, the curricula form an archive of information such that a systemic review of the development can be carried out. The main objective of the review is to study the trends of development of various elements and components that constitute the curricula. Approach of the study includes :-

- study on the effect of changes in environmental concerns;

- the chronological presentation of the changes in time assigned to various modes of delivery;

- a study on the evolution in categorised subject groups and their apportionment in the curricula;

- whether the current course operation has addressed the problems of public concern.

3.3.4.3 Reports of External Examiners and Records of Board of Examiners Meetings

Examination result is an objective measure of the quality of the course. Apart from the examination results, other issues concerning the students' performance are discussed during the Board of Examiners meeting. There are external examiners for the course. They vet the examination papers and scripts. They make comments on the standard of the examination papers as well as on the students' performance in examination. This contributes external opinion on the quality of the course. Compilation and analysis of these documents and information were made serving as a very valuable triangulation to the findings through other approaches.

3.3.4.4 Departmental Advisory Board

The course operating department has set-up an advisory board to give advice on the courses run by the department. The board comprises members from various sectors, including other tertiary education institutes, relevant government departments, professional bodies, consulting firms and contracting firms. Such a wide spectrum of representation provides opinions and advice from different backgrounds and interests. It keeps the department abreast of the outside world. Records of discussions of this board were reviewed. Issues concerning quality of the course were studied and analysed. This again serves as another valid triangulation to this research.

3.3.4.5 College and Departmental Policy on Quality

The college has a quality policy and requires each department to produce a quality policy of its own. It is based on this policy that the courses are operated. How good is the policy? To what extent is the policy followed or could be followed? A review of these documents would provide the answer to these questions and reflect the quality of the course. The relevant parts of these documents are interpreted and analysed for the purpose of this research.

3.4 Operation of the Survey

The groundwork for the study commenced in mid-June, 1998. Construction of the instruments for data collection was in December 1998. The pilot study started in March, 1999. It took about two months to complete the pilot study. Upon completion of the pilot survey the collected data was sorted. As a practice, the answer sheets were marked and the OMR scanner was used to read the answer sheets.

After all these practices, the pilot study data was analysed. The questionnaires were reviewed with the feedback from the pilot survey respondents.

The questionnaires were then revised and used in the main survey. The finalised questionnaires are attached in Appendix A. The main survey began in October, 1999. Students' questionnaires were distributed to the students in class and were collected by handing-in to the researcher's office within a week's time. Staff questionnaires were also distributed through the departmental internal mailing system and were collected by the same process within a week's time. Thus the questionnaires to these two categories of respondents were sent and collected in a way by an official position. They were self-administered questionnaires. Those for the graduates in employment and the employers were distributed and collected by post. They were postal-questionnaires. To encourage return, self-addressed and stamped envelopes were enclosed with the questionnaires when sending out by mail. Telephone calls were made as follow-up action to boost the response rate. This method of improving the response rate has been discussed by Cohen and Manion (1994). Questionnaires for the graduates in further study were distributed and collected via the teaching staff of the further study institution. Originally this was scheduled to be collected in two weeks' time. The response was very poor that only 15 responses were collected. The collection time was extended. Hoinville and Jowell (1978) warn about bias in surveys caused by non-responses. During the extension period, visits and talks with the students were made by the researcher to persuade them to complete and return the questionnaires. The collection period was eventually extended by almost two months. The final return rate on this batch of respondents was 80%. However, those in employment gave a very low return rate of 34%. Returns from the graduates and that from the employers were the categories that faced

difficulty in collection and had a comparatively low response rate of 50.7% and 38% respectively. Table D-3 shows the details of the response rate and is attached in Appendix D.

Overall, the response rate to the entire survey was satisfactory. The response rate ranged from 34% - 100%. The lowest response rate recorded was that from the graduates in employment. The highest return rate was that from the staff which was practically 100%.

The returned replies were sorted, edited and coded for data tabulation and computer analysis. The source data from the responses to the questionnaires were transcribed onto the special answer sheet by filling in small circles with pencil manually. Care had to be taken to minimise error during the process of filling in the answer sheets. Every answer sheet was checked against the answers given in the questionnaires. The answer sheet was then read by a OMR scanner (NCS optical scan 3). The OMR scanner is a peripheral that collects the data and transmits it to a host computer. The computer, by the Scan Tools for Windows software package, performs additional processing to format the data into useful data files. Scan Tools can create text file containing commands used by SPSS and by Excel. The data files so created were further computed and analysed by the Statistical Package for Social Science (SPSS) or the Microsoft Excel programme. Missing data was excluded from the particular item of the questionnaire.

Upon completing the pilot interviews and making reference to the experience and practice gained, 'group discussions' were arranged according to the schedule. Similar to the pilot interviews, guideline of discussion was prepared. It was used as a facilitator, rather than following it strictly. The discussion was held in an open forum style where participants were invited to contribute, speak and argue

freely on the topics. Each discussion lasted about 1½ hour. The discussions were held in the meeting rooms of the researcher's office or the employer's office. As a whole the medium was English, but in many cases the students and graduates spoke in Chinese. The discussions were tape-recorded with the permission of the participants. Notes were also taken during the entire session. In October, 2000, the first group discussion was arranged for Group 1. The number of participants was not too promising. However, it turned out to be a successful discussion giving valid and constructive opinions and comments on the course. The graduates voiced out their view on the employment. The employers also expressed their view on the graduates' performance. With this experience, to encourage more participants, phone call reminders were made to the invited participants. The second discussion for Group 2 had a satisfactory turn-up rate. All group discussions were completed by the end of October 2000.

Interviews were arranged upon completion of the group discussions. They were held either in the researcher's office, the interviewee's office or in the meeting rooms. Each of these locations afforded quietness, minimal interruptions or intrusion of privacy. Each interview lasted about 30-45 minutes. At the outset, interviewees were reminded of the objectives of the interviews as well as the main areas that would be covered. Permission for tape-recording the conversation was also sought. Six out of eight interviewees gave their permission while others refused. Similar to the group discussions, the medium was English, but the students and graduates mostly had difficulty to express and were told to speak in Chinese.

Notes were taken during the tape recording sessions to enable the researcher to keep track of the interviewees' responses. In addition, the conversations were transcribed after the interview. The researcher checked the accuracy of the

transcriptions by listening to the tape a second time. In interviews which were not tape recorded, copious notes were taken during the session and these were then cross-checked with the interviewees after the session was formally closed.

It was planned to arrange eight interviews. Two with each of the four groups : student, staff, employer and graduates. After the first trial of interviews with each group, changes to the schedule in light of the experience from the first round of interview were made in the second round of interview. The interviews were started with some background questions about the interviewee. The questions were posed in an open-ended way, whenever possible. It was scheduled to conduct the first round of interview in March 2001 and all interviews were completed by the end of March 2001. The findings, records and transcriptions were then analysed to facilitate the discussions presented in the following chapter.

3.5   Summary

This chapter on methodology has given an account of the theoretical background to the survey work, pointed to the complexities of different perspectives and levels in the subject under investigation, and explained how the different parts of the survey were conceived and carried out. It has also touched on related questions, about curriculum development and entry-requirements, which also impact on the question of quality in the education process. Other papers and reports are also mentioned, which have relevance to the question and help towards clarifying the survey results.

Chart 3.1 Flow Chart of the Survey

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                    ┌──────────────┐
                    │ Ground Work  │─────────────────────────────────────────────┐
                    │  Prepartion  │                                              │
                    └──────┬───────┘                                              │
                           │                                                      │
                    ┌──────┴───────┐                                             │
              ┌─────┤Identification│──────────┐                                  │
              │     │of Respondents│          │                                  │
              │     └──────┬───────┘          │                                  │
      ┌───────┴─────┐ ┌────┴─────┐    ┌───────┴──────┐                          │
      │Preparation  │ │Preparation│   │    Draft     │                          │
      │of Interview │ │of Discuss.│   │Questionnaire │                          │
      │  Schedule   │ │ Schedule  │   └──────┬───────┘                          │
      └──────┬──────┘ └────┬──────┘          │                                  │
             │             └───┐             │                                  │
             │          ┌──────┴──────┐  ┌───┴──────┐                           │
             └──────────┤    Pilot    │  │Pilot     │                           │
                        │  Interview  │  │Survey    │                           │
                        └──────┬──────┘  └───┬──────┘                           │
              ┌────────────────┼──────────┐  │                                  │
     ┌────────┴─────┐     ┌────┴────────┐ │  │  ┌───────────┐   ┌─────────────┐ │
     │ Interview    │     │Check Validity│ │  └─>│Source Data│──>│Answer Sheet │ │
     │  Practice    │     │of Questionn. │ │     │  Sorting  │   │Marking Pract│ │
     └──────────────┘     └─────────────┘ │     └───────────┘   └──────┬──────┘ │
                        ┌─────────────┐   │                     ┌──────┴──────┐ │
                        │Review feedbk│   │                     │Practice Use │ │
                        │on Questions │   │                     │of OMR Scanner│ │
                        │of Pilot Int.│   │                     └──────┬──────┘ │
                        └──────┬──────┘   │                            │        │
                        ┌──────┴──────┐   │     ┌──────────────┐       │        │
                        │Revise Interv│   └────>│Review Feedback│<─────┘   ┌────┴────┐
                        │/Discussion  │         │& Analysed Data│         │Search of│
                        │ Schedules   │         └──────┬────────┘         │Archrival│
                        └──────┬──────┘         ┌──────┴──────┐          │Documents│
                        ┌──────┴──────┐         │   Revise    │          │    &    │
                        │   Group     │         │Questionnaire│          └────┬────┘
                        │ Discussion  │         └──────┬──────┘               │
                        └──────┬──────┘         ┌──────┴──────┐               │
                        ┌──────┴──────┐     ┌───┤   Survey    ├───┐           │
                        │  Interview  │     │   │  Operation  │   │           │
                        └──────┬──────┘  ┌──┴──┬─┴───┬─────┬──┴┐  │       ┌───┴────┐
                        ┌──────┴──────┐  │Emplo│Grad.│Stud.│Staff│        │Analysis│
                        │Transcription│  │yer  │Ques.│Ques.│Ques.│        └───┬────┘
                        │& Analysis of│  │Ques.│     │     │    │            │
                        │ Discussion  │  └──┬──┴──┬──┴──┬──┴──┬─┘            │
                        └──────┬──────┘     └─────┴─────┴─────┘              │
                               │            ┌─────────────┐                  │
              ┌─────────┐ ┌────────────┐ ┌──┤ Source Data │                  │
              │Data Scan.│ │Answer Sheet│ │  │ Collection  │                  │
              │& Analysis│<│  Marking   │<│  └──────┬──────┘                  │
              └────┬─────┘ └────────────┘ │  ┌──────┴──────┐                  │
                   │              ┌───────┘  │    Data     │                  │
                   │              │          │   Sorting   │                  │
                   │              └──────────└─────────────┘                  │
              ┌────┴────────┐                                                 │
              │Interpretation│<───────────────────────────────────────────────┘
              │& Discussion  │
              │of Survey Res.│
              └──────────────┘
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Chapter Four   Analysis and Discussion

4.1   Introduction

This chapter analyses and discusses the findings of the survey described in the preceding chapters. As a supplement to the discussion on topics related to the main survey, such as the course that the research relates to, and development and changes in the curriculum, the entry qualifications to the course are also described. The quality assurance system applied to industry generally is introduced and discussed at the end of the chapter, with a consideration of its adaptability to the field of education.

4.2   The Higher Technician Course

4.2.1   Introduction

Section 2 below provides general background information for the more detailed discussions later in the chapter. It describes the study course which is the object of this research, how it came into being and how it is delivered and managed. The facilities and resources of the college are outlined, together with teaching methods and manpower, the expected standards of students and their assessment.

4.2.2   The Course

The course that the research is making reference to is a higher diploma course in civil and structural engineering operated in a technical college in Hong

Kong. It is a vocational course preparing students for a career as higher technicians in the construction field.

The course was transferred from the then Polytechnic in Hong Kong and has been in operation under the management of a vocational training organisation since 1993. The current programme content has been developed with the advice of industry. Formal industrial liaison continues through the departmental advisory board (DAB) which includes representatives from local tertiary education institutions, government bodies, consulting firms and contractors. Progression into the course is mainly via the route of having appropriate successes in the Hong Kong Certificate of Education Examination. Very few are admitted based on the successes in obtaining an ordinary diploma or ordinary certificate in civil engineering. There is the opportunity for mature persons to enter the course, but these entrants are few.

The Higher Diploma is studied over three years on a full time basis. During each academic stage the students study ten assessed units. Year 1 gives the student a broad educational base together with an introduction to aspects of the industry. In addition to laboratory work, the students will undertake site visits and participate in an integrated project. Students in the first year also complete 25 days at the organization's training centre obtaining an appreciation of craft skills and site safety.

The second year develops all of the students over a core of seven units with a further three elective units. The second year also contains laboratory work and an integrated project. Students in the second year also complete 35 days training at a training centre of the training authority of the construction industry (TACI) which is funded from levy derived from the construction industry. This Authority operates training centres that allow full scale construction operations to be carried out under

site conditions. This training is of a significant nature. During the summer after year two, students are recommended to seek industrial placements.

In year three, students complete seven common units and three electives. The individual project is a major piece of work in this final year (Hong Kong Technical College, 1997).

The comprehensive structure and the content of the programme is attached in Appendix F.

4.2.3 Physical Resources

The College is of modern construction on the island of Tsing Yi, Hong Kong. The civil and structural engineering programmes were part of the portfolio for the College's initial development. As a consequence of this, laboratories and other physical resources were included in the original college design concept. All laboratories are well appointed, equipped and suited to their purposes. They are of a sufficient size to accommodate the programmed group size of 20 students with comfortable space and furnishing for the students to write up experimental notes and data.

Separate laboratories are available for the conduct of experiments in support of the core and option units in :

Geology and Soil Mechanics.

Concrete and Structures.

Strength of Materials.

Traffic Engineering.

Hydraulics and Hydrology.

Public Health.

Land Surveying Equipment Store.

Whilst each laboratory is under the control of a full time member of the academic staff, each area has the support of at least one full time technician.

The laboratories contain the full range of experimental equipment to support the syllabus content. This equipment is provided in many multiple sets to suit the needs of the student groups to rotate through the exercises. In many instances the equipment is capable of being used to undertake experiments higher than the current programme requirements. Particular mention must be made of the concrete and structures laboratory. Additional to the standard beam, column and torsion equipment, the college possesses large testing beds for slabs and pre and post tensioned beams, and is commissioning an earthquake simulation bed. This laboratory is also accredited as an industrial testing centre for concrete, and steel bars by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) (HOKLAS, 1998).

The work in the department is well supported by the central college facilities.

Although the large central library holds multiple copies of the necessary standard texts, and some are retained on reference, it is expected that students will obtain their own copies of required volumes.

The college appreciates that its role is to produce students who are industrially useful and, therefore, equipment and software must be maintained at an industry compatible standard.

4.2.4 Teaching Methodology

Students are accommodated in suitable lecture theatres and rooms to meet the delivery of lectures and tutorials. Lectures are normally conducted in lecture

theatres with group size of 80 or 120. Tutorials and practical works would be in small rooms and laboratories at a group size of 20. Because of the numbers of students involved on the course the delivery schedules are tightly controlled. However, the students maintain their individuality through tutors and tutor groups. The student numbers dictate that the lecture delivery is didactic, but course work assignments and group work in laboratories, surveying, and tutorials give scope for group and individual working activity. For practical activities more than one staff member may be present or the staff member will have competent technician support. Overall the student has 22 staff contact hours per week. (Hong Kong Technical College, 1997)

4.2.5   Academic Staff

The College policy is that all full time academic appointees are university graduates in relevant engineering disciplines with not less than three years working experience. Fifty percent of them hold higher academic degrees and ninety two percent are chartered members of relevant professional institutions. There is considerable activity of staff within their associated institutions and with their continuing professional development (JAP, 1999).

In the laboratories the technical support staff are competent to assist students in the practicalities of the use of the equipment.

4.2.6   Students

The Higher Diploma entrants commence the programme on successful completion of their general full time secondary school education with passes in 5 Hong Kong Certificate of Education Examination (HKCEE) subjects including English, Mathematics and Physics. Although the Higher Diploma programmes have

been designed to meet standard entry requirements, a large percentage of entrants have studied to the Advanced Level (A Level). The controlled intake of 120 entrants from an excessive applicant group means that there is competition for places on the programme (Appendix G). The competition for entry, the career opportunities, the status of the profession and the relevance of the course leads to few students failing to complete (Appendix G). It should also be noted that the programme has a gender mix of one female to ten males.

4.2.7   Assessment

The coursework of students is assessed against a scheduled marking scheme and for the 'project' grades clear criteria for assessment are established and the student's work is assessed by two staff members.

Summative assessments are based on the student's performance in coursework and examination. In the majority of subject areas the ratio is 30:70 but for Engineering Surveying the ratio is 40:60 (Hong Kong Technical College, 1997), showing the importance of practical work.

4.2.8   Curriculum Design and Development

The course was validated before it was commenced in 1993 (Hong Kong Technical College, 1993a) and was revalidated in 1996 for a five year period under the College's system and guidelines (Hong Kong Technical College, 1996b).

The overall objective of the course is to provide a programme of study whose graduates will be higher technicians, and thus the course curriculum has to be practically orientated.

Each academic element of the course has its particular contributions. The lecture materials provide the basis for tutorial, laboratory and coursework activities which serve to synthesize the core of knowledge and experience within individual subjects. The Year Project draws on this core and acts as a mechanism to integrate various subject matters. It also provides students with opportunities to practice conceptual and detailed designs. The basic engineering and practical training in the institute's training centres and the training authority of the industry provide an excellent experience in practical work and implementation of theoretical knowledge in the real world.

The development and monitoring of subject syllabi are the responsibilities of the 'subject stream coordinators' representing distinct areas of the curriculum. Each subject of the course has to undergo an on-going review by the subject lecturer who will submit an end-of-year report, via the relevant 'subject stream coordinator', to the course leader. These reports along with the annual course report will be discussed at departmental meetings and the meetings of the 'board of studies' (BoS) and departmental advisory board (Hong Kong Technical College, 1996a).

Student input to the curriculum design and development is achieved through meetings with year/personal tutors, the course leader, the BoS and in particular through a comprehensive questionnaire issued to students. The results of surveys conducted on graduates and their employers will be another source of input in the improvement of the curriculum.

4.2.9   Quality of Teaching and Learning

Teaching and learning are the central activities of an educational institute. Logically a large proportion of effort should be placed on improving the quality of

teaching and learning. It is the policy of the department that the quality of teaching is monitored and improved through peer reviews, student interviews and questionnaires.

It is recognized that it is important to address, as early as possible, students' specific learning handicaps. Major emphasis should be placed on prevention of problems. The most prevalent student problems that are causing learning handicaps are :

- Wrong learning attitude and habits. (Most students are found accustomed to 'spoon-feed' learning attitude. They rely very much on the teachers. They do not like to read text/reference books nor to search reading materials from the library. Some students may have difficulty in understanding and visualizing the lectures and choose 'rote-memory').

- Lack of confidence

- Lack of motivation

- Weakness in language and communication skills

It is therefore the policy of the department (Hong Kong Technical College,1996c) to address these problems early in Year 1 and to coordinate a concerted effort at reshaping the habits and attitudes of the students, to motivate and stimulate them, and to build a confidence in themselves and in the profession. It is important for each teaching staff to :

- Teach at the right level

- Focus on local practice

- Adopt a simple approach whenever possible

- Focus on good grounding on the essentials

- Insist on tutorial attendance and encourage participation in tutorial discussions

- Give opportunities to students to define problems for themselves

- Drill students in developing professional and good work habits. (Students like to do things in their own style, without caring if it is good or bad. To work as professionals, it is necessary to follow the good practice).

4.2.10   Standards Attained by Students

The graduates are expected to be widely accepted throughout the civil engineering and construction industry with career opportunities working at the higher technician level. The graduates are expected to have the ability to think independently, to appreciate technical, managerial and social constraints in their working environment and to make professional judgement. To fulfill these expectations by their prospective employers, the graduates have to attain certain standards so that they will :

- be able to apply the fundamentals of applied science in formulating solutions to construction problems, including a good appreciation of the civil engineering theory and practice.

- be conversant with modern design and construction techniques in civil engineering

- be conversant with modern experimental techniques and the properties and behaviour of the materials used in civil engineering construction.

- be aware of the constraints that influence civil engineering projects, such as environmental and economic considerations.

- be conscious of the social responsibilities of a higher technician.

- appreciate the need for safety and quality in project execution and management.

- have improved ability to communicate logically and clearly.

One of the best indicators to measure the standards attained by the graduates is their employers' satisfaction. The department has regularly performed a survey of employers regarding the performance of graduates, at about six months after their graduation each year.

A measure to evaluate the standard of the course is the recognition by reputable professional organizations. The course has been accredited by the Engineering Council, UK (JAP, 1999). Currently, the course is seeking recognition as satisfying the academic requirements for Associate Membership of the Hong Kong Institution of Engineers (HKIE).

To ensure that the standards attained by the students are appropriate to their level of study, the external examiners through the board of examiners moderate the examination papers and assess the students' performance (Hong Kong Technical College, 1997).

4.2.11 Course operation and Management

The course is operated under the Department of Construction. This Department has been in operation since October 1993 and currently has an establishment of a department head, two principal lectures, six senior lecturers, sixteen lecturers, one associate lecturer and other supporting staff.

The operation and management of the courses is under the direction of the Head of the Department (HoD). The Head of Department is assisted by the course leaders in the day-to-day running of the courses. A Course Team is established for each course, consisting of the Head of Department, course leader and all academic staff involved in the teaching of the course. A Course Executive Group, which is a sub-set of the Course Teams, is responsible for the execution and management of all

the courses in the department. The Course Executive Group consists of the Head of Department, course leaders, year tutors and, if necessary, the subject stream coordinators. The Course Team meets four times a year whereas the Course Executive Group meets regularly once a month and holds ad hoc meetings whenever there is need .

The year tutors act as personal tutors. They are members of the academic staff whom the student can approach on personal problems and difficulties. This complements the advisory service provided by the college student counselors.

Lecturers are asked to report to the course Executive Group on student performance and lecture progression at regular intervals. The Course Executive Group reviews ongoing issues and monitors the teaching approaches of individual staff to ensure that they follow what has been discussed and agreed during Course Team meetings (Hong Kong Technical College, 1996c).

In addition to the above mechanisms of management, there are working groups or teams on matters such as examination, time-tabling, admission, laboratory, industrial training and student projects. Input and contribution are also obtained from students through the Board of Study and student interviews; from external examiners through the Board of Examiners and from industry and academic representatives of other institutes through the DAB.

The course leaders will arrange for academic staff to provide written reports based on interview with each student.

Each year the course leader submits to the Academic Planning and Audit Committee (APAC) a course summary report of the course. The report lists a quality grade for each unit and the supporting services. It also provides an overall quality grade for each year of a course. Very good grades or those below the satisfactory

level is accompanied by a brief explanation. A copy of the course quality analysis return which incorporates the recording of these grades required by the Academic Review Committee (ARC) is included in Appendix H. The course summary report also shows the cohort progression information. A copy of this progression report is included in Appendix H.

4.3 The Evolutionary Changes of Course Curriculum

4.3.1 Introduction

This section deals with the changes that have taken place over time in the course curriculum for higher technicians. The reasons behind the sometimes substantial changes, as well as various constraints on the process of change, give helpful insights for the study of the quality of an educational programme. Changes in content, method, and subject areas are noted here, as well as the more recent influence of factors such as safety concerns, environment and quality awareness.

4.3.2 The Changing Course Curriculum

Training of construction higher technicians and supervisors in Hong Kong in the past years has been relying on the relevant Higher Diploma courses offered initially by the Hong Kong Technical College and then by tertiary education institutions including universities and the vocational education institutes. Throughout the years, the curricula of these courses have been revised many times to suit the changes in education policy and the needs of society. The main objective of the higher diploma course is to prepare secondary school leavers to become higher technicians in the construction industry. The curriculum is designed to suit the demand of the industry and the academic background of the students admitted.

After having been in operation for such a long time, the curricula of these construction related courses form an archive of information for the researcher to carry out the systematic review described here. The main objective of the review is to study the trends of development of various elements and components that constitute the curricula. The approach adopted for the review includes (a) a study on the impact of the changes in environmental factors, (b) a chronological presentation of the changes in the time assigned to various modes of delivery, (c) a study on the evolution in categorized subject groups and their apportionment in the curricula and (d) a review on whether or not current problems of public concern have been addressed in the development of the course that is currently operating. Possible reasons for important changes at different periods are also discussed.

The following discussion and findings are based on the review of the course schemes of the courses and relevant administrative documents under the operations of the Hong Kong Polytechnic, Hong Kong Technical College and the Institute of Vocational Education of Vocational Training Council (VTC) from 1973 to present (Law et al, 2001a). They show that the changes follow the impact of environmental factors (Chart 4.3.1) (Law et al, 2001a), such as:-

- The development of the education system of the society;

- The changes in the resources allocation by government;

- The changes in career expectation of the students and parents;

Chart 4.3.1   Impact of Environmental Factors on the Course
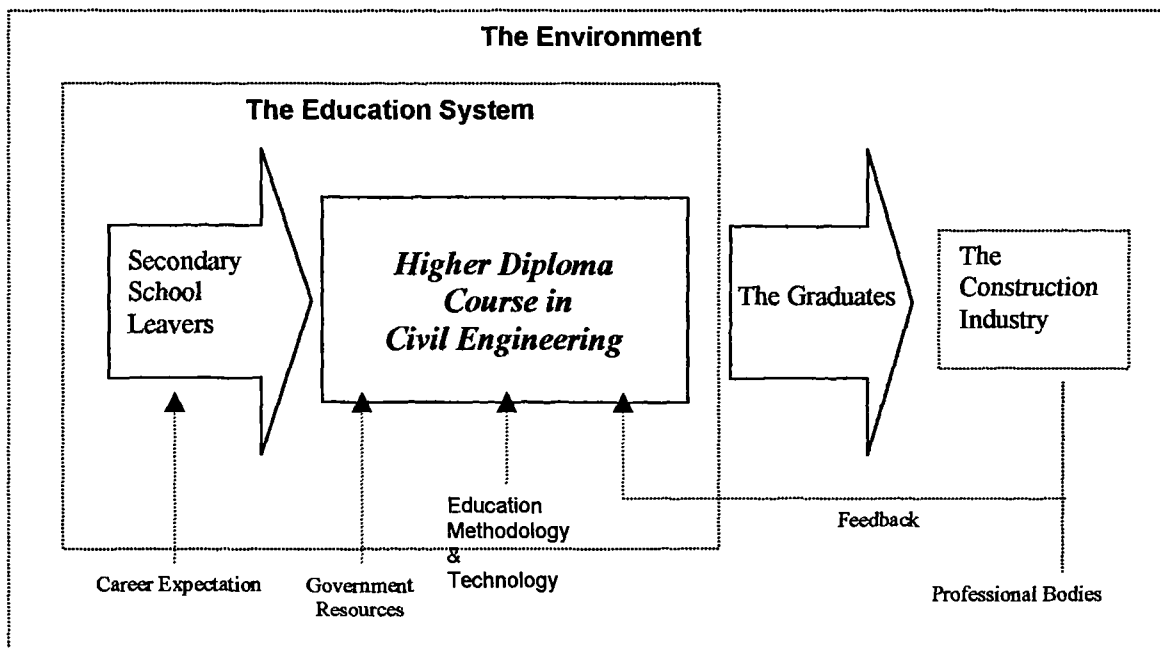
4.3.3   Changes in Contact Hours and Modes of Delivery

Students in these higher diploma courses have to attend lectures and practical work classes, and to fulfill all the assessment requirements on coursework and examination before they would be awarded the Higher Diploma. The delivery of the course is in the form of lecture, tutorial, laboratory class, project work and workshop training. The impact of the environmental factors on the curriculum is the changes in contact hours and redistribution of the modes of delivery. The contact hours and distribution of modes of delivery vary in different periods of time. The pattern of change in the last twenty seven years is summarized in Chart 4.3.2 (Law et al, 2001a). It is found that there is a general trend of decrease in the total number of contact hours during the period from 1973 to present. The total reduction amounts to 30% in this period.

Chart 4.3.2   Total Number of Contact Hours and Modes of Delivery
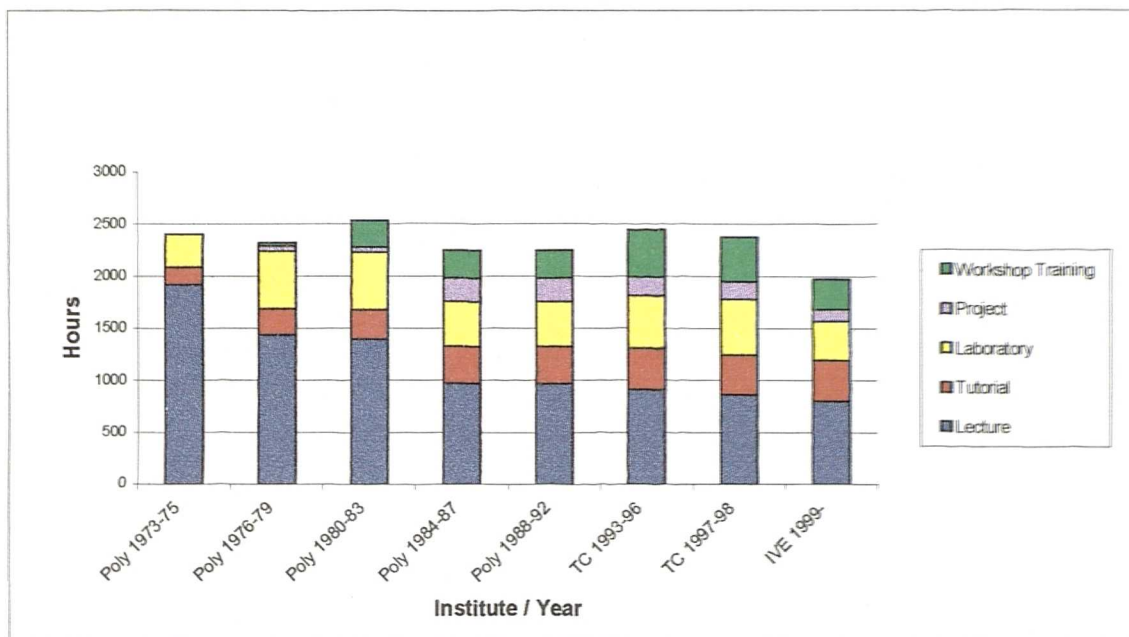
(i)   ***Lecture Hours***

Lecture is the main mode of delivery. There is a rapid reduction in lecture hours during the period from 1973 to 1984. The number of lecture hours was reduced from about 1900 to about 900. From 1984 up to present, the number has been in the range of 800 to 900 hours. The chart shows that there is still a gentle decreasing trend. Detailed review of the syllabuses, shows that emphasis on practical aspects has been increased substantially. The analysis on the number of lecture hours has revealed that the paradigm of higher technician education is shifting from the transfer of knowledge by lecture to a process of learning through practical illustration and problem solving. It is also shifting from more academically oriented to more practically emphasized.

(ii)   ***Laboratory Class***

Laboratory work has long been recognized as an important element in engineering education. Through experimental work, a student can acquire actual

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experience on the behaviour of engineering materials and the application of theories in construction. Throughout the evolution history, laboratory class only occupied a small range of about 20-24% of the curriculum hours .

(iii)   *Tutorial Class*

Chart 4.3.2 shows a very clear increasing trend in the contact hours of tutorial class in the curriculum. The contact hours have been increasing gradually from about 170 hours to 400 hours. With the increasing emphasis on "learning to learn" in the modern education culture, it can be envisaged that this mode of study will become more and more important.

(iv)   *Workshop Training*

Workshop training was first introduced in 1976. At that time the duration was only 30 hours. It was increased considerably to 60 hours (spread over 10 weeks) in 1980 and then became an essential and important element of the Higher Diploma course (Hong Kong Polytechnic, 1976, 1980 & 1984). Its contents were further strengthened when the course was transferred to VTC in 1993 (Hong Kong Technical College,1993b). The objectives of workshop training are to provide students with some hands-on experience in various craft skills of the construction industry and to provide the students with basic understanding of safety and quality in construction work. The present curriculum includes training in the construction of formwork and falsework, scaffolding, re-bar fixing, drain-pipe laying, operation of construction plants and machineries. Feedback from employers and graduates confirms that workshop training improves the readiness of a graduate to take up site supervisory job (Hong Kong Technical College, 1994).

(v)   Project

The relative weighting of the student project was small before 1980. It was a final year project with a weighting of only 75% of a module value (Hong Kong Polytechnic, 1980). The weighting was substantially increased in 1984 but the project module was still confined to the final year. When the course was transferred to VTC in 1993, the course structure was re-organized. Students have projects in each stage of the 3-year study program. In the year 1 project, the purpose is to let students gain the experience of team work in design and construction and appreciate the basic principles of engineering mechanics. In year 2, the students have to complete another group project of more complicated nature which requires them to apply what they have learnt in the lectures. In year 3, each student has to complete an individual project. The purpose of the individual project is to train students to work independently with initiative in problem solving.

4.3.4   Changes in Categorised Subject Groups

Apart from changes in contact hours, there has also been movement in the apportionment of the subject areas in the curriculum. Chart 4.3.3 (Law et al, 2001a) shows the changes in this aspect. According to the course curriculum, students are required to study about ten modules. For comparison and analysis purposes, these modules are categorized into the following six groups of subjects.

- **Generic Skill – Language**: including English and Communication

- **Generic Skill - Analytical**: including Mathematics, General Science and Computer Science & Application

- **Management**: including Law, Contract and Costing

- **General Engineering Skill**: including Mechanics, Thermodynamics and Electrical Engineering

- **Technical Skill - Analytical**: including Structural Analysis, Design of Structures, Soil Mechanics and Hydraulics

- **Technical Skill - Technology**: including Structural Detailing, Surveying, Construction Technology, Highway and Environmental Engineering

Chart 4.3.3   Changes in Distribution of Subject Areas
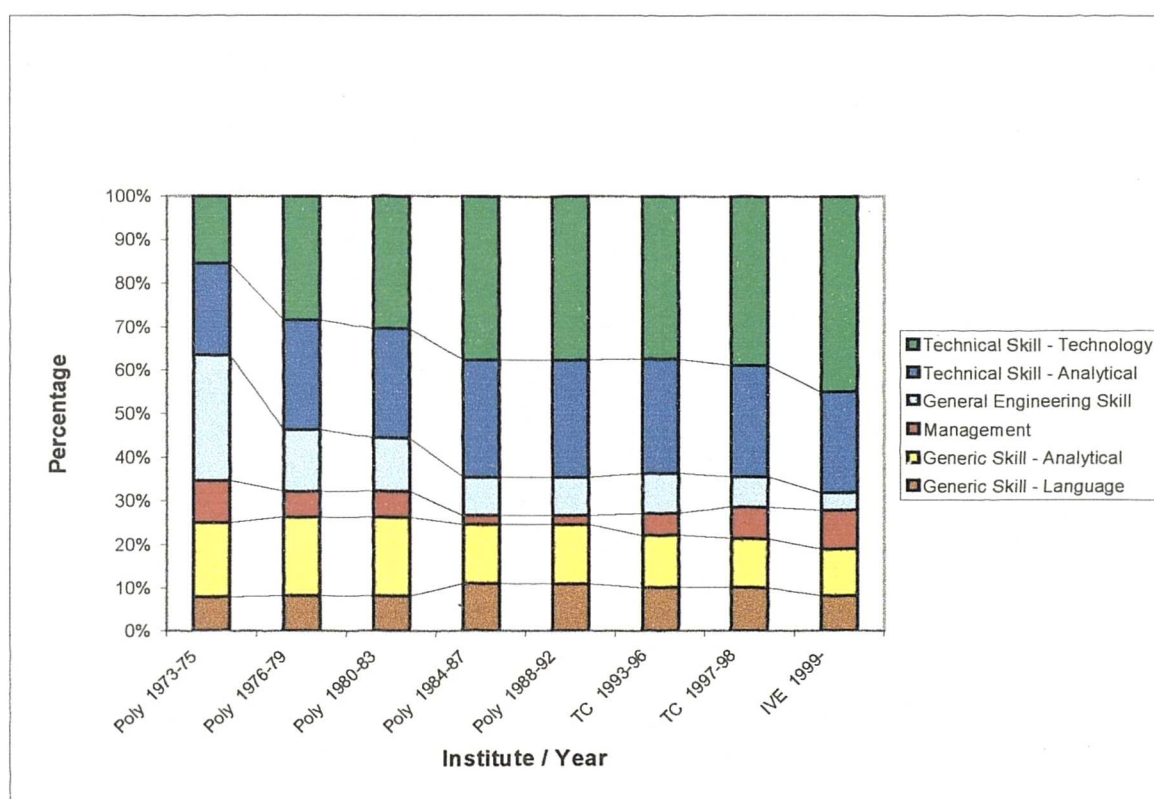
(i)   Generic Skill

As can be seen from the chart, the proportion of the curriculum assigned to the teaching and learning of generic skill, including both language skill and analytical skill, has been fairly constant throughout these years although there is a slight decreasing trend in recent years. It is within the range of 20 to 25%. However, a

detailed review of the syllabuses reveals that there has been changes in the contents of the subjects.

In the early years, both English and Communication were parts of the syllabus of the subject 'The Engineer in Society', which was a very important subject at that time. It occupied about 210 hours in the curriculum and covered not only English and Communication, but also topics in law, government, economics and management. In 1984, this subject, 'The Engineer in Society' was replaced by a subject solely for the study of English.

Mathematics was an important part of the analytical skill in the curricula of the early years. It was taught to a very high level and the coverage was also very wide. Starting from 1984 onwards, there were substantial changes in the syllabus of this subject. The coverage was trimmed down and the level was also lowered. At about the same time, computer science was introduced and was gradually playing an important role. In recent years, there has been a gradual change in the teaching of computer related subjects. The emphasis shifted from learning of computer languages and programming to the use and application of general and specialized software packages. In the age of information technology, the ability of a graduate to use computer or information technology techniques to enhance productivity is an important factor to his employability in the job market. To cope with this demand, the number of contact hours used to train students in computer application has been increased rapidly in recent years. This is shown in Chart 4.3.4.(Law et al, 2001a).

(ii)   *Management*

When the subject 'The Engineer in Society' was phased out in the mid-80s, there was a substantial decrease in the management content in the course. This

situation remained for about ten years. In 1993, subjects in Construction Management were re-introduced and covered the topics in project management, programming, law and contractual procedures, quality management, safety management and professional ethics. Construction Management subjects now occupy about 10% of the course content.

(iii)   *General Engineering Skill*

There is an obvious trend in the reduction of the content of the general engineering skill subjects. In the early years, the year one curriculum had a high proportion of common subjects within the various engineering discipline courses. These subjects were Mechanics, Thermodynamics, Material Science, Electrical Engineering, Building Services Engineering and etc. In recent years, there is a trend towards differentiation. Most of the above common subjects phased out from the construction engineering discipline courses. The deletion of these subjects is based on the arguments that (a) in the advance technology age, work is done by specialists; graduates would not be engaged in works other than construction work. Other works would be carried out by specialists. (b) This would allow more time for the core subjects and (c) it reduces the student's total contact hours as well as reduces their burden of study. Even where some of these subjects have not been replaced, the syllabuses have been trimmed down, merged and modified to cover only those topics that are construction related. The subject 'building service engineering' which draws the knowledge from the above mentioned subjects is closely related to construction and has to be retained in the curriculum. The main theme of keeping this subject is to let students have some idea and the basic knowledge in 'building services' work that they may have to co-operate with the specialists in 'building services' engineering.

Since the graduates would not be doing this type of work directly, the in-depth knowledge, especially the theoretical and design elements of this subject is found not necessary. Thus those elements are taken out from the syllabus of the subject.

(iv) *Technical Skill*

The apportionment of construction related technical skill training has been increased substantially. The increase has occurred mainly in the technology part. The analytical part remains more or less the same.

There is a trend towards specialization and differentiation. In 1973, the course had only two core areas of study. They were in structural and geotechnical engineering. In 1976, subjects in public health, transportation engineering and coastal engineering were introduced. In 1984, eight specialized subjects were introduced as options for students to select. In year 2, students were given to select between "Sewerage and Waste Treatment" and "Traffic & Highway Engineering". In year 3, students had to select one from the following six subjects : Temporary Works; Design of Concrete Structures; Water Resources Supply and Treatment; Transport Planning; Coastal and Offshore Engineering and Advanced Engineering Survey & Photogrammetry (Hong Kong Polytechnic, 1984).

Chart 4.3.4   Changes in Contact Hours on Computer Application
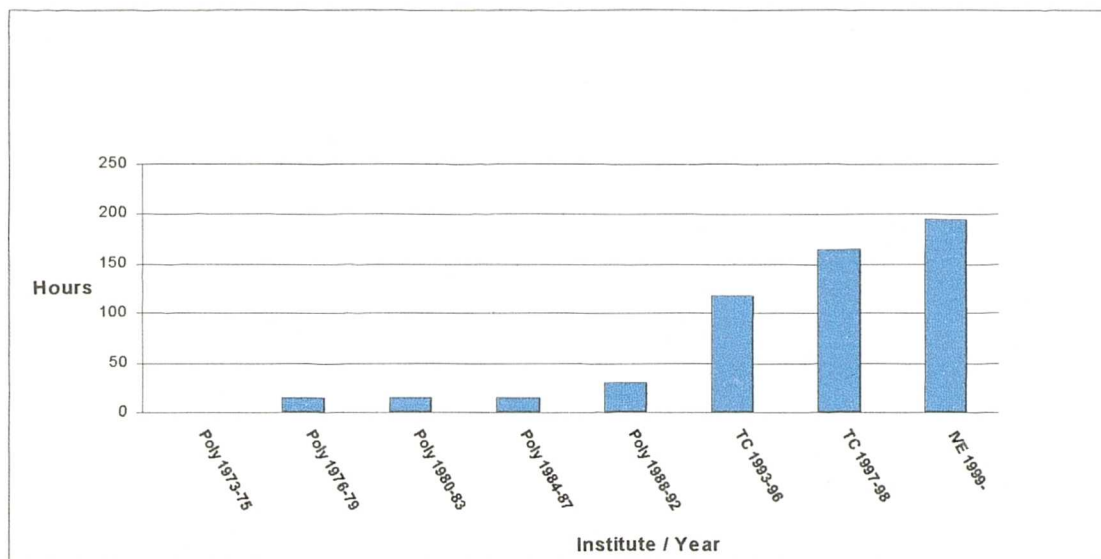
A half module for computer science was first introduced in 1976. The contact hours on computer application have been increased rapidly since the course was transferred to VTC in 1993. A new subject in Computer Aided Drafting was first introduced in 1993 and topics in computer applications were included in various subjects like Structural Analysis and Design, Soil Engineering, etc. Computer application was then further extended to structural detailing, traffic engineering, construction management and etc. It is expected that this trend will continue.

4.3.5   Environmental, Safety and Quality Awareness

With the increase in demand for quality of living, there is greater concern in environmental impact, safety and quality. There is need for environmental, safety and quality awareness by the students. As this awareness extends to almost all subjects, it is considered more appropriate to include these topics in all subjects, instead of making it an unique subject in the course. Chart 4.3.5 (Law et al, 2001a) shows the contact hours in the current curriculum on the topics of environmental

awareness, construction safety and quality management. It can be seen that there is an upward trend in the number of teaching hours for each of these topics. This is an indication that the development of the curriculum has taken into consideration, the need for awareness of environmental, safety and quality issues in society.

Chart 4.3.5 Development of Environmental, Safety and Quality Awareness
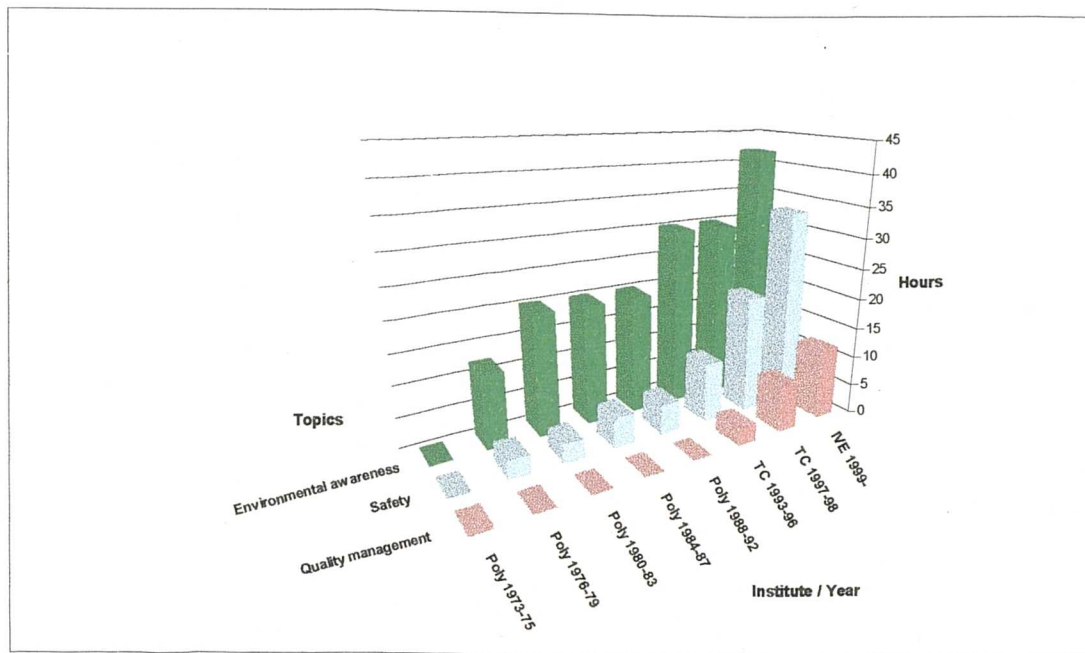
4.3.6 Summary

The review of past curricula described above is the first step towards an overall modification of the curricula for the training of higher technicians in the construction industry to satisfy the demands of society. Although the results obtained may not be conclusive, the approach of studying various components and aspects in curriculum provides indications for the directions of future development. Any future proposal on modification of curriculum, the aspects that have been discussed above, have to be included in the consideration.

4.4 Effect of Pre-entry Qualifications

4.4.1 Introduction

This section describes the findings of the research about the effect that pre-entry qualifications have on the academic performance of the course students, some of whom have been entering the course with higher qualifications than the course was originally designed for. In view of recently proposed major changes in the Hong Kong education system, these findings may be helpful towards planning for the impact on curriculum and admission criteria that these changes will have in third-level education.

4.4.2 Data Analysis and Discussion

The technician course is a three year stage-based program. Students are required to take the stage examination at the end of each year (stage). For analysis of the survey data, students who had studied Form 7 were designated as "special students". Those coming straight from Form 5 were designated as "normal students". Students who had studied Form 7 but did not take or completely failed the A-level examination were excluded from the "special student" list. They were grouped as "normal students" in the analysis. In this study, a survey was carried out on all the students that graduated from the course since its inception in 1993. Altogether, five cohorts of students had graduated from the course and were included in the test.

The mean marks of the "special" and "normal" students were evaluated as shown in Table 4.4.1.

The table shows that the mean marks of "special students" are higher than those of "normal students" for all five cohorts in all three stages of year-end examinations, except in the final year examination of the 1995 cohort. It also shows a

trend that the difference in mean marks between "special" and "normal" students becomes less and less during the three years of study, except for the 1993 cohort. This gives an indication that the effect of pre-entry qualification is stronger in first year than in second and third years.

Apart from visual inspection, statistical approach using a one tail two-sample t-test was also carried out to test whether the mean mark of the "special students" would be statistically higher than those of the "normal students". In the t-test, the two groups of students, "special" and "normal" were treated as two independent samples. The three stage-end examinations were also treated as three separate samples.

Table 4.4.1   Means of Marks for Student Cohorts from 1993 to 1997

All Students	Marks		
	UA1	UA2	UA3
93	59.40	66.96	67.77
94	64.12	62.57	60.08
95	60.99	57.30	56.72
96	62.88	56.75	61.22
97	59.55	57.25	61.42
Normal Students	Marks		
	UA1	UA2	UA3
93	58.31	66.38	66.96
94	63.55	62.30	59.88
95	60.82	57.25	56.83
96	62.10	55.93	60.66
97	59.20	57.09	61.29
Special Students	Marks		
	UA1	UA2	UA3
93	67.42	70.67	72.92
94	67.35	64.20	61.20
95	63.33	58.17	54.67
96	ˎ65.72	59.52	63.00
97	62.13	58.33	62.27

Legend :-

UA1 is the mean of marks for stage 1 year-end exam.

UA2 is the mean of marks for stage 2 year-end exam.

UA3 is the mean of marks for stage 3 year-end exam.

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Table 4.4.2   Difference in Means of Marks between Special and Normal Students

Cohort	Difference in Means of Marks		
	UA1	UA2	UA3
93	9.10	4.29	5.96
94	3.80	1.90	1.32
95	2.52	0.92	-2.17
96	3.62	3.59	2.34
97	2.94	1.25	0.98

Table 4.4.3   Number of Special and Normal Students

Cohort	Student Number					
	Year 1		Year 2		Year 3	
	Normal	Special	Normal	Special	Normal	Special
93	89	12	77	12	76	12
94	96	17	90	15	82	15
95	120	9	109	6	103	6
96	91	25	84	25	80	25
97	111	15	102	15	96	15

In view of the possible difference, such as quality, among the five cohorts of students and the possible difference in the three stages of examination, a combined test was carried out which was used to test the same hypothesis of a series of independent experiments (i.e. different random samples were employed in each of the experiments) in order to obtain a summary of the overall test of the hypothesis.

Winer (1971) Combined Test method was used in this analysis. Under the hypothesis that the difference in mean value for t-statistics in the population is zero, the statistics

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$$z = \frac{\sum t_i}{\sqrt{\sum [df_i / (df_i - 2)]}}$$

where df_i represents the degree of freedom associated with t_i, has a sampling distribution which is approximately normal when $df \geq 10$. Therefore, the common hypothesis of no difference in mean marks between "special students" and "normal students" can be rejected if the computed Winer Z-statistics is higher than the critical value (i.e. 1.96 for one-tailed 97.5% level of significance or 1.645 for one-tailed 95% level of significance). However, it is recommended that df should be higher than 10 for each sample, otherwise the approximation by the unit normal distribution is not good and the results become inappropriate.

A one-tailed test is used instead of the traditional two-tailed in the hypothesis testing of the difference in mean marks because the alternative hypothesis "mean mark of special students is higher than normal students" has a specified direction "higher" with respect to null hypothesis of "no difference". In such a case, limiting the region of rejection to one tail of the sampling distribution for null hypothesis provides greater power with respect to an alternative hypothesis in the direction of that tail.

(a)

(b)
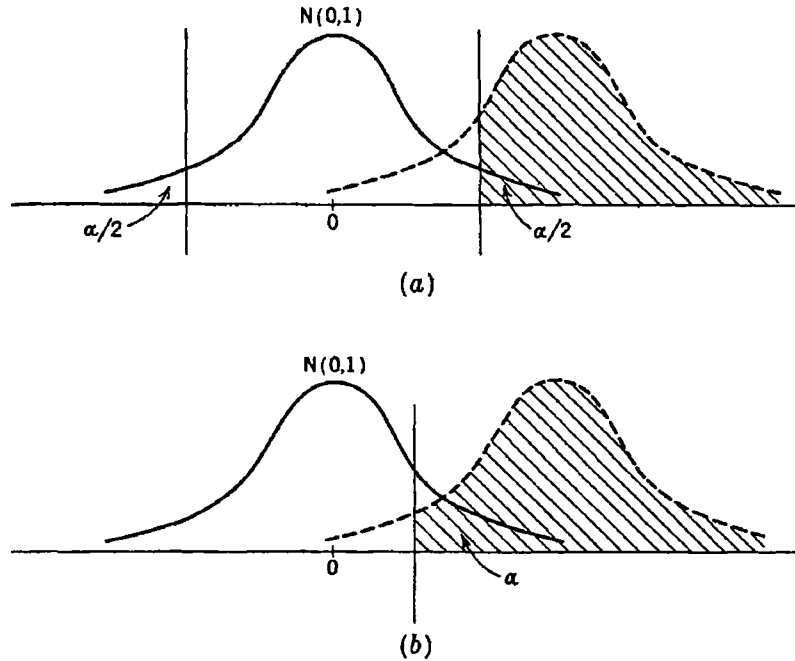
The power under a two-tailed test with respect to a specified alternative hypothesis to the right of zero is shown by the shaded area in part (a) above. The corresponding power with respect to a one-tailed test is shown in part (b). The increased power in the one-tailed test is at the expense of zero power with respect to alternative hypothesis, which is to the left of zero.

Moreover, the 1.96 critical value of a 5% α in a two-tailed test is the same as that of a 2.5% α in a one-tailed case and the 1.645 critical value of a 5% α in one-tailed case is just equal to 10% α in two-tailed test. In one-tailed hypothesis testing, rejecting the null hypothesis of no difference in mean mark is subjected to tighter condition when using 2.5% α than using 5% α. The one-tailed test at 2.5% significant level is adopted in this analysis, although the actual probability is reported in each case.

Table 4.4.4   t-Statistics for First Year Examination

Year	df	Test statistic	p-value	Effect Size
93	99	2.539	0.007	0.781
94	111	1.576	0.059	0.415
95	127	1.065	0.145	0.368
96	114	1.907	0.030	0.431
97	124	1.522	0.062	0.419
Winer Test		**3.816**	**0.0001**	

When we look at the t-tests in each cohort individually, we find that all the tests have small p-values (0.007 to 0.062) except in year 1995 (0.145). The non-significant result of year 1995 may be due to the small sample size of the special students (n_e = 9). However, when we combine the five cohorts using the Winer test, the test statistic is 3.816, and the p-value is 0.0001. This shows that the 'special students' perform significantly better than the 'normal students' in the first year examination.

The mean and standard deviation of the effect size are 0.483 and 0.168 respectively, and the 95% confidence interval (CI) for the effect size is (0.3350, 0.6302). As the confidence interval (CI) does not include zero, this again indicates that the 'special students' have significantly better performance than the 'normal students' in the first year examination.

Table 4.4.5   t-Statistics for Second Year Examination

Year	Df	Test statistic	p-value	Effect Size
93	87	2.225	0.015	0.691
94	103	0.750	0.228	0.209
95	113	0.296	0.384	0.124
96	107	1.915	0.029	0.436
97	115	0.490	0.313	0.152
Winer Test		**2.514**	**0.006**	

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When we look at the t-tests in each cohort individually, we only find significant results (p-value = 0.015 and 0.029 respectively) in years 1993 and 1996, However, when we combine the five cohorts using the Winer test, the test statistic is 2.514, and the p-value is 0.006, which shows a significant difference between the two groups of students. This shows that the 'special students' perform significantly better than the normal students in the second year examination.

The mean and standard deviation of the effect size are 0.322 and 0.240 respectively, and the 95% confidence interval (CI) for the effect size is (0.1125, 0.5325). As the confidence interval does not include zero, this again indicates that the 'special students' have significantly better performance than the 'normal students' in the second year. This result is consistent with the findings from the Winer test .

Table 4.4.6   t-Statistics for Third Year Examination

Year	df	Test statistic	p-value	Effect Size
93	86	1.791	0.039	0.495
94	95	0.829	0.205	0.233
95	107	-0.775	0.780	-0.325
96	103	1.568	0.060	0.359
97	109	0.464	0.322	0.129
Winer Test		**1.716**	**0.043**	

Similar to the results for second year examination, when we look at the t-tests in each cohort individually, there are significant results (p-value = 0.039 and 0.060 respectively) only in years 1993 and 1996,. However, when we combine the five cohorts using the Winer test, the test statistic is 1.716, and the p-value is 0.043, • which shows a significant difference in performance between the two groups of

students. This shows that the 'special students' perform significantly better than the 'normal students' in the third year examination.

The mean and standard deviation of the effect size are 0.178 and 0.313 respectively. The 95% confidence interval for the effect size is (-0.0964, 0.4527), which includes zero. This seems to indicate that the 'special students' do not have significantly better examination results than the normal students in the third year. However, as the lower limit of the 95% confidence interval is very close to zero, this appears to be a marginal case.

Compare the Examination Performance during the Three Years' Study

Based on the Winer tests of the three stage examinations (UA1, UA2 and UA3), we find that the difference between the two groups of students is most significant in the first year. It is only marginally significant in the third year (p-value = 0.043). This shows that the effect of studying Form 7 is the strongest in the first year study .Over the years, the effect sizes were 0.48, 0.32, 0.18 in years one, two and three. This further supports the finding that the effect is the strongest in first year, weaker in second year and weakest in third year.

4.4.3   Summary

From the two sample *t*-tests and the Winer Combined Test, the overall results do support the argument that 'special students' that have studied Form 7 do perform better, in the study of the technician course, than the 'normal students'. However, this 'Form 7' effect was found to be less important as the student moves

through. In the year one examination, the Form 7 entrants are likely to get a higher score; but by the third year, that is not quite and almost washed out.

The 'special students' are subjected to more stringent criteria for entering into Form 7. The minimum requirement is 6 passes in the HKCEE, which is higher than that required by this technician course. One may argue that the difference in examination performance is attributable to these entry criteria (higher student calibre) rather than the effect of the added value of Form 7. In any case, the effect is found significant only on the early years of study. Thus the results of the analysis do provide implications to the course. When reviewing the curriculum, in particular the entrance criteria and the first year program, these analysis findings have to be considered. Could these Form 7 entrants be considered to have exemption on the first year program? If so details have to be worked out and further study has to be carried out.

4.5   Quality of the Course

4.5.1   Introduction

This section forms the core of the study, focusing on the quality of the course as offered. It details the findings of the whole study, from the questionnaire survey, interviews and group discussions, about different aspects of the course quality, both positive and negative, as revealed in the opinions of students, teachers, graduates and employers. Areas discussed include technical proficiency, language and computer competence, management and staff commitment and quality. The section concludes with observations about teaching methodology and college support and facilities for both staff and students.

4.5.2   The Course

4.5.2.1   Appropriateness of the Course

Appropriateness is one of the key issues in the quality concept of a course. We have come across students dropping out on the claim that the course is too difficult.   There are concerns on the employability of the graduates as well as comments from industry urging that the products of the vocational courses should be able to meet the demands of the industry.   To prepare an answer to the above, as well as contributing to the compliance, diagnostic and performance monitoring of the courses, feedback on this aspect obtained from students, graduates, teaching staff and employers serves as essential and helpful data.   This data was obtained through the instruments of questionnaire, interview and group discussion.   Two hundred ninety questionnaires were distributed to the students and 278 replies were received, giving a response rate of 95.8%.   Over 70% of them said they were satisfied with the course and over half (57%) of them considered the course was useful to their future career and or employment. Will this opinion change with the experience of employment and or further study? The survey was extended to the graduates of the course.

Chart 4.5.2.1A
View of students on usefulness of the course to future career

Chart 4.5.2.1B
Satisfaction with the course in general by students
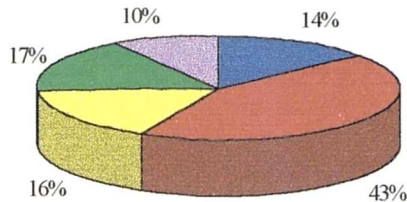
Very useful ■ Useful □ Useless ■ Very useless ▨ No idea
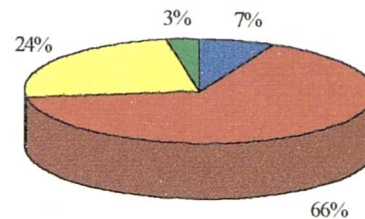
Very satisfied ■ Satisfied □ Disappointed ■ Very disappointed

One hundred and five graduates replied to the questionnaire out of 207 surveyed (50.7%). Among these graduates, 59 were in employment and 60 had attained a course for further study. 14 of them were in employment as well as in further study. 52% of the graduates in further study said that they took the course with the intention of becoming a professional engineer. 27% said they wanted to learn more. Among the 59 graduates in employment, 81% of them said that the course was useful to their work. However, those in further study showed different opinions. 41% of them expressed that the course did not give help to their further study. Only 10% of them said that it was very helpful. The course was viewed by the graduates as more tailor-made for employment than for further study. This appears to be in line with the main objectives and aims of the course.

The remarks made in the group discussions and the expressions given in the interviews are, in general, in line with the above findings. Quotes of relevant dialogues, expressions and remarks are selected and given below under the respective

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headings for further discussion to supplement the findings from the questionnaire survey.

Satisfaction with the course

During the interviews, the students expressed their satisfaction with the course and opined that they had confidence to do the work, if they were employed. The following are the verbatim or direct translated quotes of the interviewees.

Student Interviewees:

Mr. 'A'   'The course has provided what I have expected';

Mr. 'B'   'The course is designed to train higher technicians, I think I can do the work if they employ me';

Mr. 'C'   'I shall look for employment upon graduation'.

Similarly the graduates indicated that they were satisfied with their jobs. They expressed that what had learned in school was not sufficient and agreed that they still had to learn a lot from work. The following are the illustrative quotes from the graduates.

Graduate Interviewees (Translated) :

Mr. 'A'   'I am satisfied with my job';

Mr. 'B'   'Still a lot has to be learned from work. What has been learned in school is the foundation from which further development and learning have to be carried out'.

Employers expressed that the graduates were helpful. They liked to employ the graduates. Verbatim quotes are given below to support the phenomenon.

Employer Interviewees (Verbatim) :

Mr. 'A'   'I like to employ your graduates. They are ready to work and require

minimal guidance. They have very good structural concept. Their

working attitude is good';

Mr. 'B'   'I am satisfied with their performance';

Mr. 'C'   'Now the draftsman is more than a tracer. He should have structural

design background and be able to do the detailing. Thus I like to

recruit your graduates to be the technician doing the drafting work.

That would give a great hand to the designer and enhance the quality

of the drafting work'.

The discussions and views demonstrate that the stakeholders, in general,

are satisfied with the course.

Chart 4.5.2.1C
Reasons of the graduates go for further study

	To become a professional engineer
	To learn more
	For self-interest
	No employment
	Others
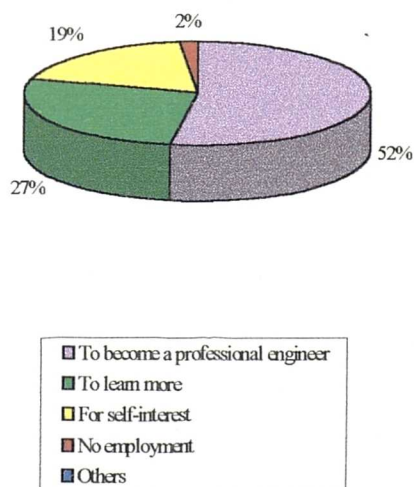
Chart 4.5.2.1D
View of graduates on usefulness of the course

	In employment	In further study
Very useful	36.19%	25.00%
Useful	50.48%	51.67%
Not Useful	13.33%	23.33%
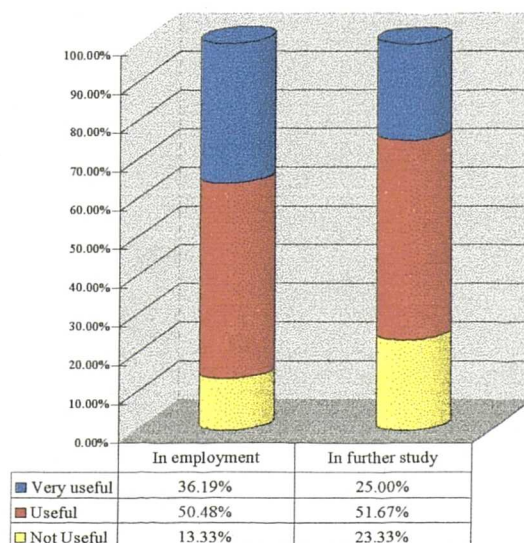
4.5.2.2 Employment Situation of the Graduates

Before I probe into the details of employability of the graduates, it is interesting to look at the employment status and situation of the graduates. From the survey, it was found that their employment was under a wide spectrum of employers. 32% of the graduates were working in the government. 27% of them were working in contractor firms. 25% were employed by consultant firms. 11% of them were engaged in material supply and material testing trades. The balance 5% were in other fields.

Chart 4.5.2.2A
Nature of the company recruiting the graduates of this course
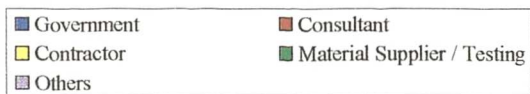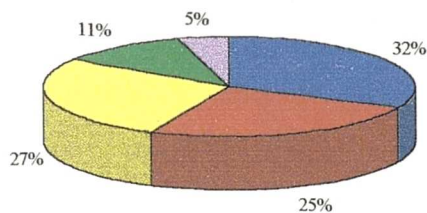
Chart 4.5.2.2B
Number of graduates recruited by each company
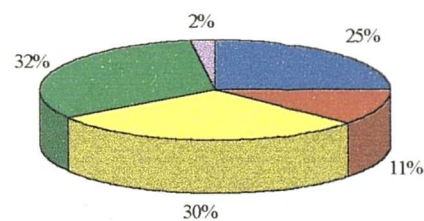
Within the above employment distribution, it was found that the number of graduates employed by each firm did not seem to be in proportion with their establishment. 25% of the employers recruited more than 6 graduates from the course while 11% of them recruited 5 to 6 graduates. 30% of them had 3 to 4 graduates from the course working in their companies and 32% of them had only 1 to 2 graduates in

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their employment. There were 2% of the employers who had no graduates from the course in their workforce.

These graduates in employment, were assigned or engaged in a variety of duties and work. Generally they were involved in site supervision, design and drafting, engineering surveying, quantity surveying and material supply and testing. Not all firms or offices required the graduates to be involved in all these duties and work.

Not all companies required the graduates to do the site supervision work. 68% of the employers had recruited about 149 graduates for this duty. About 122 graduates were employed by 57% of the employers and involved in design and drafting work.

In land/engineering surveying, only 5% of the employers recruited about 7 graduates for this work. 43% of the employers recruited about 100 graduates to do quantity surveying work. Material supplies and testing is a less popular trade. Only 25% of the employers employing about 52 graduates were in this field of work.

There were employers who were engaged in works not relating to construction. About 5% of the employers had recruited about 15 graduates for works or duties not relating to construction.

From the data, it emerges that the most popular employment is in site supervision, design & drafting and quantity surveying work.

As discussed in the previous section, the employers are satisfied with the performance of the graduates. According to the working environment, the wide spectrum of employment can be divided into 'site-work' (out-doors) and 'office work' (in-doors). During the interview with the students, it was found about 60% of the students prefer to take up 'office work' and only 40% are willing to do site-work

(out-doors). Students said that the working environment and conditions on sites is not as comfortable as in offices. Female students, in particular, prefer to look for 'office work'. Concerning the remuneration, the graduates during the interviews and group discussion said they were receiving the market value and were satisfied with the pay scale. One graduate said he was receiving less than that from his previous job. However, the working environment of the current job was better. He felt more comfortable and happier in the present job. Thus working environment and condition is found to be a factor to consider on top of pay-scale.

Chart 4.5.2.2C
Number of graduates involved in various types of work in a company

	Site Supervision	Design / Drafting	Land / Engineering Surveying	Quantity Surveying	Material Supplies / Testing	Duties not related to construction
None	31.8%	43.2%	95.3%	56.8%	75.0%	93.2%
2-1	18.2%	18.2%	0.0%	0.0%	6.8%	0.0%
4-3	11.4%	6.8%	4.7%	18.2%	6.8%	2.3%
6-5	9.1%	6.8%	0.0%	11.4%	0.0%	4.5%
Above 6	29.5%	25.0%	0.0%	13.6%	11.4%	0.0%
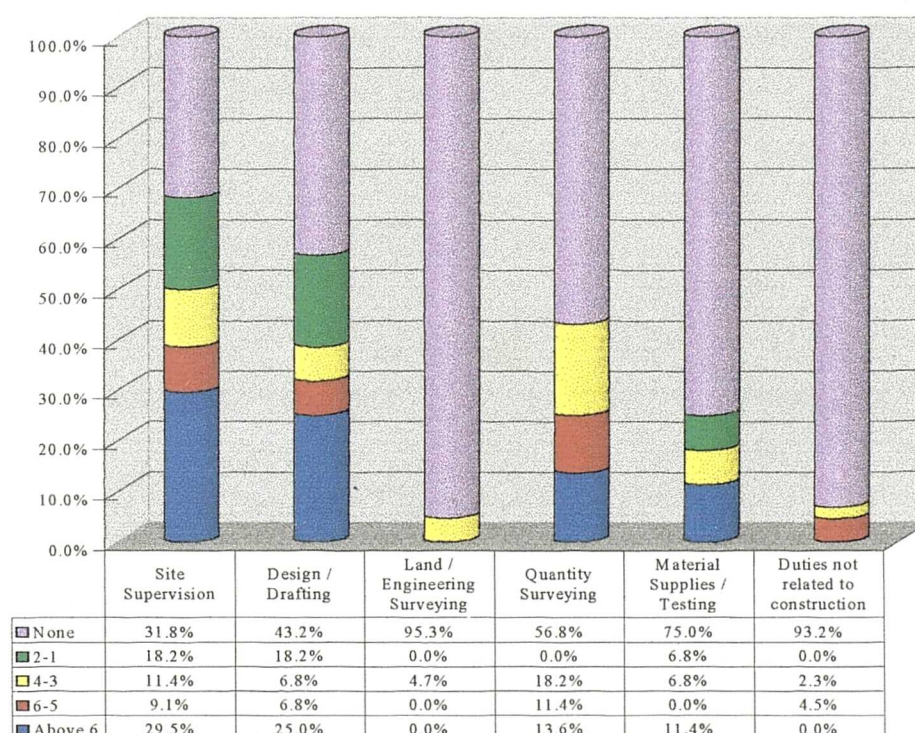
4.5.2.3   The Course Curriculum

All academic staff involved in the course were surveyed. All teaching staff said that the course curriculum satisfied the course objectives and aims. 9% of

the students expressed that they had a lot of difficulty in progressing and 82% of them had some difficulty to study the course. The reasons and causes of the difficulty were further probed and discussed herebelow. Similar to the comments on the course, 77% of the staff commented that the subjects were difficult for the students (based on examination performance). About 23% of the staff said the subjects were easy. Students' learning and appropriateness of syllabus are linked with the teaching contact hours. Some staff expressed that the lecture contact hours were a bit more than sufficient and could be reduced. That for the tutorials was expressed as about right. The contact hours for practical/laboratory work were commented too many. A very high proportion (91%) of staff found that the tutorials were useful and helpful to the students.

Chart 4.5.2.3A
View of students on difficulty in progressing with the course
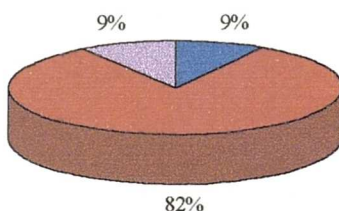
Chart 4.5.2.3B
View of academic staff on difficulty of the subjects to the student

9%   9%

82%

| ■ A lot | ■ Some | ▨ None |

5%   23%

72%
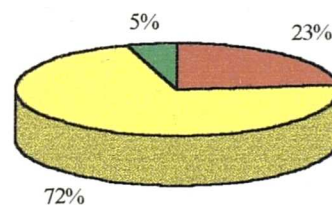
| ■ Easy | ▢ Difficult | ■ Very difficult |

What makes the study difficult? Is the course curriculum inappropriate? Are the subject syllabi too deep and too wide? From the survey, more than 90% (93%) of the staff agreed that the subjects included in the curriculum were relevant to

the course. Only 7% said that some subjects were not relevant. With respect to the syllabi of the subjects, 93% of the staff said that the syllabi were appropriate and met the objectives of the course. About 7% of them said they were not appropriate.

Chart 4.5.2.3C
View of academic staff on relevancy of the subject to the course
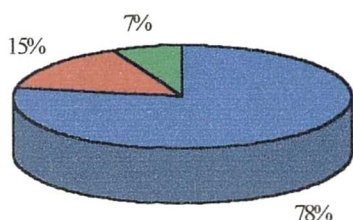
Chart 4.5.2.3D
View of academic staff on relevancy of the subject syllabus to industry and profession
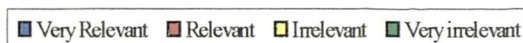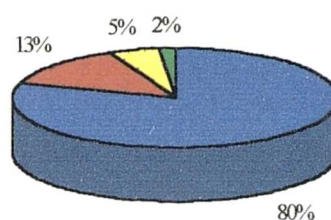
On the learning side, both the students and graduates had different opinions. They commented that there were insufficient areas and some were found redundant.

(i)   *Area(s) of deficiency and redundancy*

During the discussions, issues on deficiency and redundancy of study were raised and discussed. Opinions expressed by the students, staff and graduates are quoted below :-

Student Participants (Translated) :

Mr. 'A'   'Thermodynamics is a very difficult subject and is not relevant to construction';

Mr. 'B'   'The syllabus for Building Services is too much. We are not going to be Building Services Engineers. Why we have to study this subject?'

Staff Participants (Verbatim) :

Mr. 'A'   'In construction work, we may involve in building services work or in collaboration with building services professionals in a project. To equip oneself with the basic knowledge in building services is necessary and helpful. I agree that you students are not going to be Building Services Engineers nor would be directly involved in this type of work. So the study should be introductory and at elementary level'.

Graduate Participants (Verbatim) :

Mr. 'A'   'Having worked for three years after graduation, I have not been involved in work relating to thermodynamics, nor requiring the input of such knowledge to my work';

Mr. 'B'   'I am working in a building project. There is a lot of building services installed in the building. Knowledge of building services enhances the planning and performance of my design work. The detail design and planning of the building services system is done by the specialist consultants'.

Issues concerning the need and adequacy of practical and industrial training were also discussed. The opinions of the employers and the graduates were

very similar. 58% of the graduates (57% of the employers) expressed that the practical application learned and industrial training received from the course were inadequate. This issue was also raised by the students in the interviews. The responses from the students, graduates, staff and employers on these issues are quoted below :

Student Interviewees (Translated) :

Mr. 'A'' 'The year one practical training is waste of time. We do not get benefit from it. The year two training is good and useful but too superficial. It should be in greater depth. We should use the year one's training time for this';

Mr. 'B' 'The practical element of the course is insufficient. We need more site visits';

Mr. 'C' 'We like to have more practice to read and understand the engineering drawings and structural plans'.

Graduate Interviewee (Translated) :

Mr. 'A' 'When I was newly graduated, I had difficulty to understand the drawings. I did not know how to read the framing plan. I need the help and explanation from my peers'.

Mr. 'B' 'I have no idea on the choice of scale, the layout such as the position of the sections, plans etc of the drawing, until I have the chance to read the drawings in the office. I suggest, in addition to the assignments, students should have more chance to read and see the engineering drawings'.

Staff Interviewees (Verbatim) :

Mr. 'A'   'Yes, I agree more site visits would help. It has to be arranged at the expense of teaching hours or student's spare time, such as Saturdays';

Mr. 'B'   'Apart from arranging more site visits, "practice-sites" and "practice-projects" in the form of virtual set-ups can enhance the practical elements of the course'.

Employer Interviewee (Verbatim) :

'It seems good to introduce more practical elements to the course. In view of the compactness of the curriculum, this may further burden the student's study as no subject nor topic could be omitted or trimmed down. I consider the course is good and is a balanced program'.

An external examiner in the discussion expressed that he did support the idea of increasing the practical elements. However, the inclusion of more practical elements should not over burden the student's study. It can be seen that all agree more practical elements are good and helpful. Staff members and employers find there is difficulty to implement. To improve this, it needs more in-depth planning and consideration.

(ii)   *Should the teaching cover all industrial and commercial patterns and approaches?*

Further to the practical elements, the practicality of the course was also of concern. Eighty two percent of the employers did consider the graduates have the

basic knowledge to perform the duties in the office. With respect to the engineering concepts, 56% of the employers opined that the graduates had adequate concept. However, the graduates themselves, seemed to have a higher expectation than the employers. 62% of the graduates said that the engineering concepts learned from the course was inadequate. As expressed by the graduates in the interviews and the group discussion that, in school, not all types or approach of work was described and discussed, so they did not know how to do their work. They have to learn from their superior and or their peers. They explained that was the reason why they said that the concepts learned was inadequate in the questionnaire. Thus in the interviews with the graduates and the employers, it was raised whether the teaching should cover all the industrial and commercial approaches and patterns. Opinions expressed by the graduates and employers are quoted herebelow to illustrate the deliberation on this point.

Graduate Interviewees (Translated) :

Mr. 'A' 'My firm is using the micro-station to do the computer drafting. In school, we only learned the auto-cad';

Mr. 'B' 'In school the lectures only discussed a few types of piles. My present work is to design the pile-foundations using various types of piles'.

Employer Interviewees (Verbatim):

Mr. 'A' 'From an employer's point of view, I would welcome the school teaching the specific approach or package that my firm is adopting. I fully understand this is not practical. So long as the graduates have learned the basic concept and approach, it would be easy, with minimum guidance, for them to learn and do the work';

Mr. 'B'   'From the commercial aspect, it would be more efficient and

productive for staff to do specific job or duty in accordance with

the practice and style of the firm. We do not care whether he

knows other types or methods. We would teach them to do the

work following our system and practice. That is why we employ

technical staff';

Mr. 'C'   'Though, in school, she has not learned micro-station to do the drafting

work, yet she has learned the auto-cad. I found her picking up the

micro-station very quickly after some guided training from her

peers. I have no strong opinion that students have to learn every

package that is common in the market. It is not practical and

unreasonable to do in that way. Basic knowledge is essential'.

During the group discussion, the students said that in year 1 the workload

was light, year 2 was about right and year 3 was too heavy. They asked if the

curriculum could be re-arranged to make a balance. The external examiners, staff and

advisory board members responded to this and are quoted verbatim below.

External Examiner Participant :

'The current curriculum has spread out the work quite evenly among

the three stages of study. It may require pre-requisite studies.

Thus it may not be possible to move to the earlier stage. I do

support the idea of increasing the practical elements. The inclusion

of more practical elements should not over burden the students'

study. Topics not relevant to the duties and role of construction

technicians are recommended to be trimmed down or deleted. The course work assignments are considered appropriate and at the right level.'

Staff Participant :

'It is difficult and almost impossible to have the lectures covering all commercial and industrial practices and approaches. If all types of piles are taught, the course would become a course in piling-work. Micro-station is currently used only in government projects. It is not as popular as auto-cad.'

Advisory Board Member Participant :

'If a course concentrates too much on a topic to a great depth, student's scope of knowledge would be narrowed. This would jeopardize his/her employability. It is not encouraged'.

The general opinion is that it is not necessary and not practical to have the teaching covering every specific type and approach that the market is using and adopting.

Chart 4.5.2.3E
View of academic staff on the contact hours
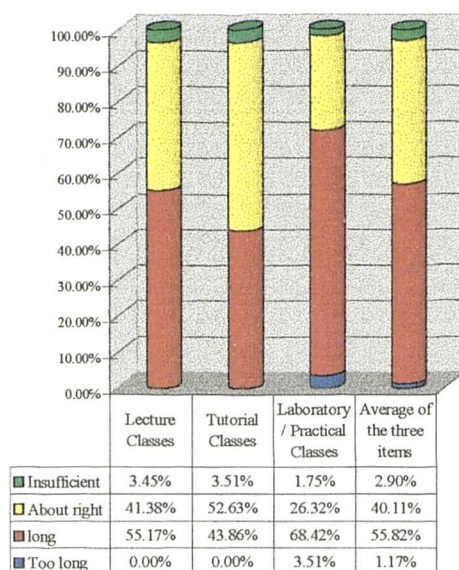
Chart 4.5.2.3F
View of academic staff on usefulness of tutorial classes

	Lecture Classes	Tutorial Classes	Laboratory / Practical Classes	Average of the three items
■ Insufficient	3.45%	3.51%	1.75%	2.90%
□ About right	41.38%	52.63%	26.32%	40.11%
■ long	55.17%	43.86%	68.42%	55.82%
■ Too long	0.00%	0.00%	3.51%	1.17%

■ Very useful   ■ Useful
□ Unhelpful   ■ Very unhelpful
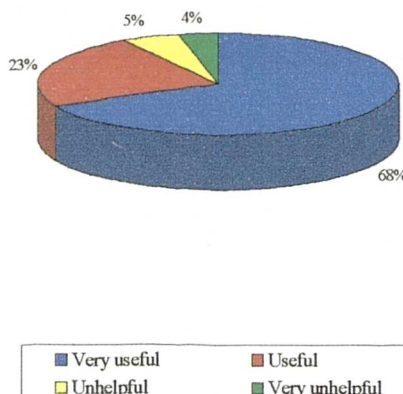
4.5.2.4   Students' Communication Proficiency and Ability to Express

The whole course is using English as the medium of instruction though some lecturers may supplement with Chinese explanations. The text books, lecture notes, assignments and examinations are in English. Students' proficiency in English has great effect on their study of the course. The students' difficulty in studying the course may be due to their lack of proficiency and confidence in communication as 69% of the students said that their English proficiency was poor. Moreover, 53% of them admitted that their ability to express themselves was also poor. This expression matched the opinion of the staff. 80% of the staff felt that the English proficiency of the majority of the students was poor. Views of the graduates on this aspect were similar. About half of the graduates surveyed, felt that both oral and written English learned in the course were inadequate. Comments from the employers on this was that 60% of them said the graduates' English was poor.

In the group discussion and interviews, students and graduates said that their language proficiency was poor and that they had no confidence in communicating with foreigners. They found it difficult to listen, especially foreigners with a strong accent. They also said that they had to learn and practice more in writing business correspondences and technical reports. On this there were responses from the employers, external examiners and staff during the discussion..

External Examiner Participant (Verbatim) :

> 'I have pointed out this weakness in previous Board of Examiner Meetings. It appears there is some improvement in the last couple of years. It is encouraged to make further improvements'.

Employer Participants (Verbatim) :

Mr. 'A' 'The language proficiency and ability to express vary with individuals. In general, your graduates are not good in this respect';

Mr. 'B' 'Your graduates are employed as technicians doing technical work. It is very rare that they have to do administrative work, writing business correspondences. Their proficiency and ability in language and writing are not too important as a concern to the employer. Thus their weakness in this area does not affect their employability. However, they have to improve, otherwise it affects or hinders his future development and promotion'.

Staff Participants (Verbatim) :

Mr. 'A'   'Language and writing ability need continuous learning and practice. Though students have learned the use of English and grammar in secondary school, it is necessary and helpful to revise this in their years one and two English. In year three, the teaching is concentrated on writing commercial correspondences. How much students can learn varies with individuals';

Mr. 'B'   'Project report writing and presentation is a good practice and learning to improve student's language and writing skill as well as presentation technique';

Mr. 'C'   'Students are advised to improve by reading more and take improvement courses in their spare time such as during the summer vacation'.

Chart 4.5.2.4A
View of academic staff on English proficiency of the students
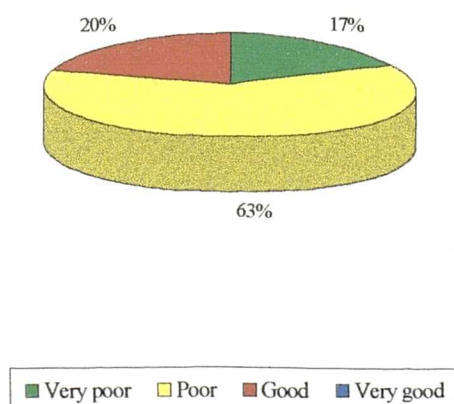
Chart 4.5.2.4B
View of students on their language skills

	English proficiency	Ability to express
Very poor	7.91%	3.60%
Poor	61.51%	49.64%
Good	29.50%	44.60%
Very good	1.08%	2.16%
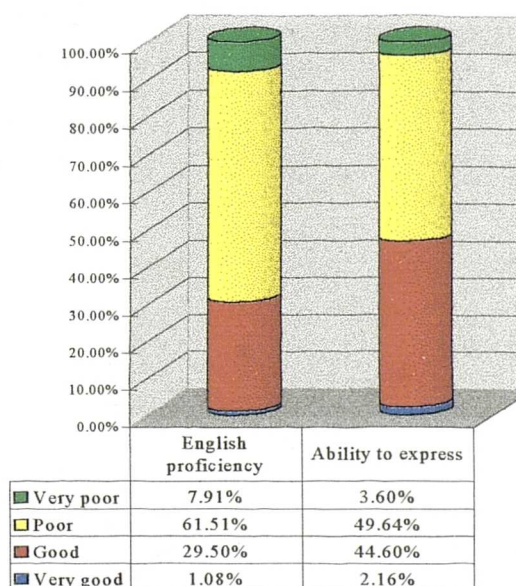
Chart 4.5.2.4C
Comment on the course in language proficiency by graduates

	Oral English	Written English	Written Chinese	Putonghua
Very adequate	13.00%	14.56%	36.27%	45.10%
Adequate	35.00%	39.81%	32.35%	23.53%
Inadequate	38.00%	31.07%	17.65%	23.53%
Very inadequate	14.00%	14.56%	13.73%	7.84%
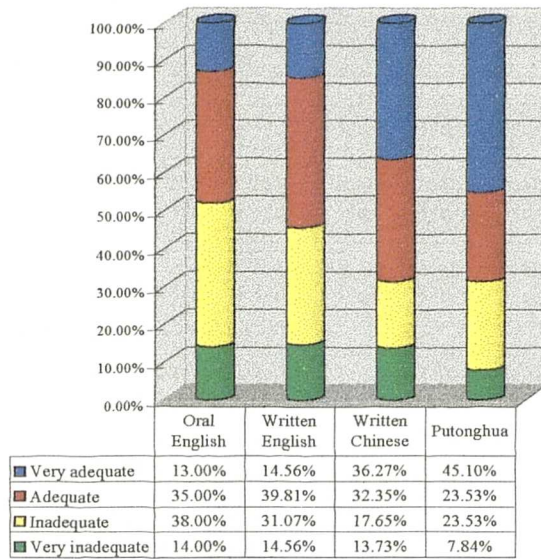
Chart 4.5.2.4D
Comment on language proficiency of the graduates in employment by employers

	Oral English	Written English	Putonghua	Written Chinese
Excellent	2.3%	6.7%	2.2%	4.4%
Good	37.2%	40.0%	31.1%	60.0%
Poor	55.8%	46.7%	66.7%	31.1%
Very poor	4.7%	6.7%	0.0%	4.4%
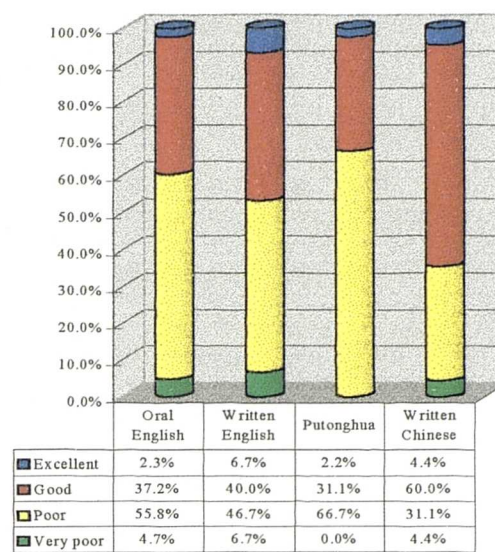
Table 4.5.2.4A   Chi-square Value for Comment on Language from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Oral English	8.09	3	0.044
Written English	5.34	3	0.149
Written Chinese	22.84	3	0.000
Putonghua	37.99	3	0.000

The graduates and the employers are the consumers of the vocational courses. It is useful to have their opinion on what they have learned. The graduates were asked to comment on what they had learned and the employers were asked to comment on the graduates' performance which could reflect the achievements of the graduates' learning. Both the graduates and the employers were answering the same type of questions It is helpful to compare the results of their comments and views, using the Chi-square test. Table 4.5.2.4A shows the results of the test. It is found that

the views of the graduates and the employers on oral English, written Chinese and Putonghua are significantly different. The levels of significance of these categories are below 0.05, showing that the views of the graduates and the employers have large dissension on the graduates' ability on these categories. For written English, the level of significance is above 0.05 indicating that the views of graduates and employers on written English coincide. Thus there is unique view that the students' and graduates' proficiency in English is poor. They have to make improvement, though an employer said it would not affect their employability. The course has to give serious thought on this finding and to make improvement proposal on this aspect.

4.5.2.5   Efforts Contributed

Apart from proficiency in communication, effort contributed is another major factor affecting the performance of the study. The time spent by students on studying the course ranged from 10 to 25 hours per week. That spent on homework also ranged from 10 to 20 hours per week. Effort contributed to the study and homework varies with individuals. Distribution of effort contribution is illustrated in the chart below.

Chart 4.5.2.5A
Effort paid by students on studying the course

	Homework	Year project	Total on studying the entire course
▨ Less than 10 Hrs	14.75%	25.91%	10.79%
▨ 10-14 Hrs	31.29%	43.80%	21.58%
▢ 15-19 Hrs	35.97%	15.33%	30.94%
▨ 20-25 Hrs	11.15%	8.39%	20.14%
▨ More than 25 Hrs	6.83%	6.57%	16.55%
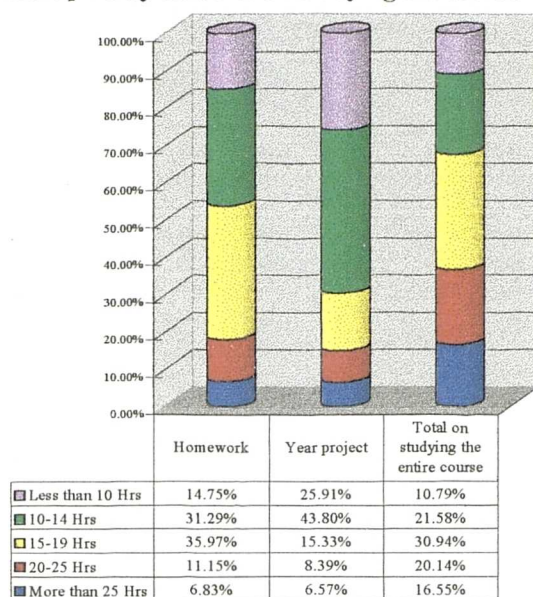
Thirty one percent of the students spent about 15-19 hours per week for the entire course. About 20% of them used 10-14 hours every week while another 20% use 20-25 hours every week. For the homework, 36% of the students used 15-19 hours and 32% of them used 10-14 hours every week. Students had diverse involvements in project work. The time they spent on project varied from less than 10 hours to more than 25 hours per. week. 43% of the students spent 10-14 hours per week on project. This was almost the time spent on doing other homework of the course, indicating that the students were quite serious about project work.

In general most staff considered the learning attitude of the students was good. Only 28% of the staff said that the students' attitude on learning was poor. About 25% of the staff said that the poor attitude might result from difficulty of the subjects. More assistance or help, in the form of tutorials may help to improve the

learning attitude. Concurrently, 75% of the staff found that the students were contributing their efforts consistently.

Chart 4.5.2.5B
View of academic staff on learning attitudes of students in the subject
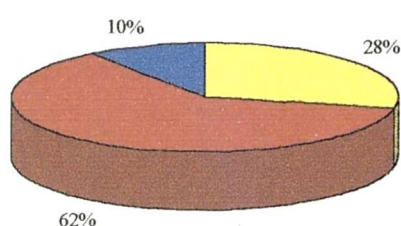
Chart 4.5.2.5C
View of academic staff on consistency of student performance in the subject

| □ Poor | ■ Good | ■ Very good |

| ■ Very Consistent | ■ Consistent |
| □ Inconsistent | ■ Very inconsistent |
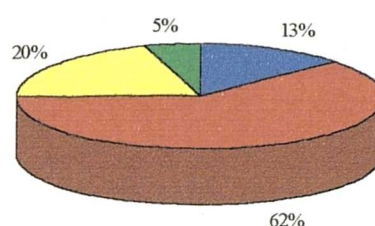
4.5.2.6   Technical Proficiency of the Course

Regarding the appropriateness of the course to industry and the profession, all teaching staff opined that the course curriculum met the demand and expectations of the industry and the profession. They also said that the subjects taught in the course were relevant. These comments can be checked with the data surveyed from the employers employing the graduates. It was based on the performance of the graduates that the employers made the comments. Over 75% of the employers surveyed, said that the course was useful and good. The employers also expressed their agreement to this in the interviews and discussion as described in section 4.5.2.1 above.

Chart 4.5.2.6A
View of employers on the usefulness of the course (based on the performance of the employees)
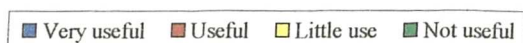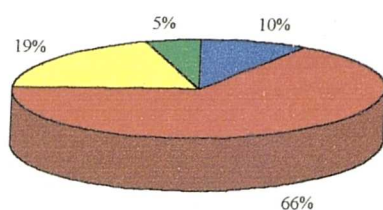
Chart 4.5.2.6B
Comment on the course in general by employers

| ■ Very useful | ■ Useful | □ Little use | ■ Not useful |

| ■ Excellent | ■ Good | □ Poor | ■ Very poor |
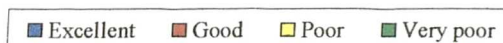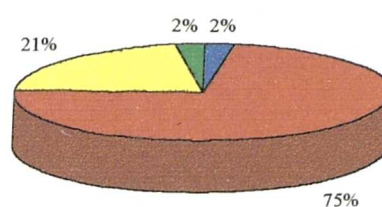
Having got the general comment from the employers and the graduates, further analysis of the survey data is made to trace the employability and technical proficiency of the graduates. Comments from the employers and the graduates on the commonly demanded technical proficiency by industry are discussed and compared below.

Chart 4.5.2.6C
Comment on the course in technical proficiency by graduates

	Analysis	Design	Construction
Very inadequate	14.42%	14.42%	12.50%
Inadequate	44.23%	37.50%	46.15%
Adequate	33.65%	37.50%	29.81%
Very adequate	7.69%	10.58%	11.54%
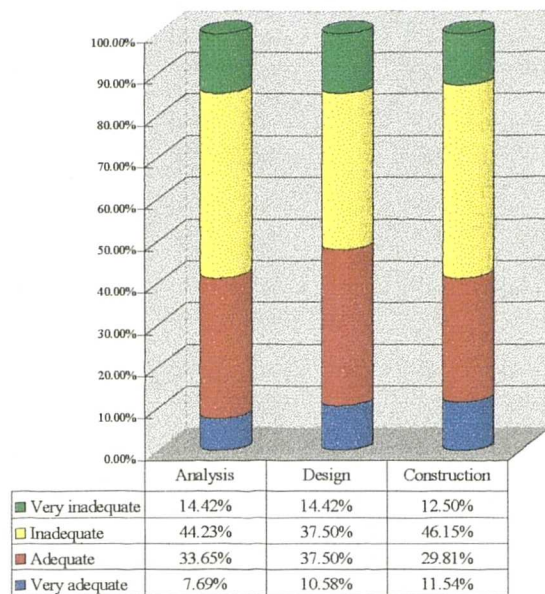
Chart 4.5.2.6D
Comment on the technical proficiency of the graduates by employers

	Construction	Analysis	Design
Cannot comment	4.4%	2.2%	2.3%
Very inadequate	8.9%	6.5%	4.5%
Inadequate	24.4%	32.6%	29.5%
Adequate	57.8%	45.7%	61.4%
Very adequate	4.4%	13.0%	2.3%
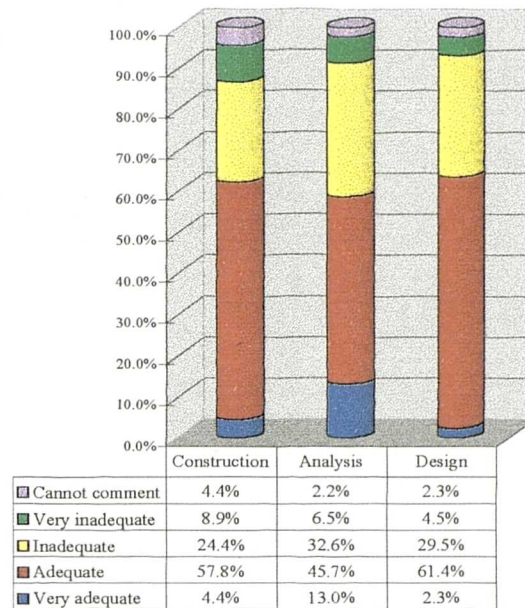
Table 4.5.2.6A   Chi-square Value for Comment on Technical Proficiency from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Analysis	7.19	4	0.126
Design	12.13	4	0.016
Construction	16.83	4	0.002

i)   *Analysis Aspect*

59% of the graduates considered the knowledge in analysis learned from the course was inadequate. This coincides with the view of the employers, as the level of significance is above 0.05

ii)   *Design Aspect*

Though about half of the graduates commented that the design learned from the course was adequate or very adequate, their view was found significantly

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different from that of the employers despite an employer in the interview said that the graduates employed by him, had very good structural concept.

iii)   *Construction Technology*

Regarding the construction technology learned from the course, 59% of the graduates gave comments of inadequate or very inadequate. The views of the graduates and employers on this are different. 62% of the employers felt that the ability of the graduates in construction was adequate . In this regard, students in the interviews commented that the practical elements of the course were insufficient. They requested to have more site visits. Views from students on this are quoted in section 4.5.2.3 above.

Chart 4.5.2.6E
Comment on the course in drafting skills by graduates

	Computer-aided Drawing Skills	Manual Drawing Skills
Very inadequate	18.27%	22.12%
Inadequate	32.69%	28.85%
Adequate	32.69%	29.81%
Very adequate	16.35%	19.23%
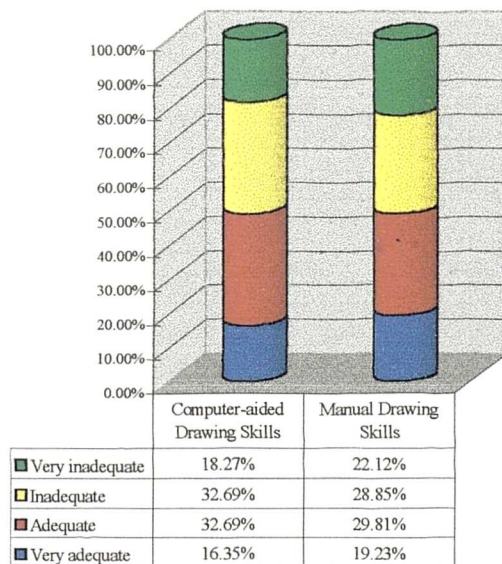
Chart 4.5.2.6F
Comment on the drafting skills of the graduates in employment by employers

	Computer-aided Drawing Skills	Manual Drawing Skills
Cannot comment	4.4%	4.4%
Very inadequate	4.4%	6.7%
Inadequate	24.4%	51.1%
Adequate	60.0%	33.3%
Very adequate	6.7%	4.4%

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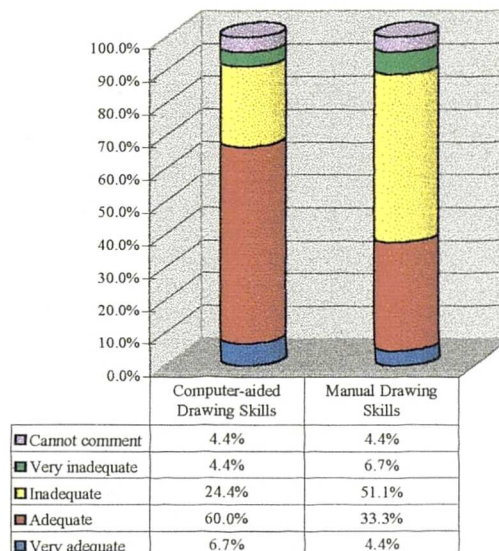
Table 4.5.2.6B   Chi-square Value for Comment on Drafting Skills from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Computer Aided Drawing Skills	17.50	3	0.020
Manual Drawing Skills	18.07	3	0.01

iv)   *Computer-aided Drafting Skills (CAD)*

The findings demonstrate that the knowledge learned in computer aided drawing meets the demand and expectation of the industry. Yet the Chi-square test results as shown in Table 4.5.2.6B indicate the views from the graduates and employers are independent from each other.

v)   *Free-hand Sketching*

For the manual drawing skills, views of the graduates were quite neutral in that about half of the graduates gave comments of adequate or very adequate. However, the opinion of employers was negative this time with 58% of them commented that the manual drawing skills of the graduates were inadequate or very inadequate. Views from the participants in the discussions are quoted herebelow.

Departmental Advisory Board member (Verbatim) :

'People may have relied too much on the computer. Young engineers seem to have lost the ability to do free-hand engineering sketch. Schools are urged to keep the teaching of manual drawing'.

External Examiner (Verbatim) :

'In my other capacity, I received reports stating that candidates sitting

the professional examinations of an engineering professional body

did badly in the free-hand engineering drawings. Candidates were

advised through the Examiners' Reports to improve this'.

Chart 4.5.2.6G
Comment on the course in computer skills by graduates

	Personal computers	General purpose software	Engineering software
Very inadequate	7.69%	4.81%	12.62%
Inadequate	42.31%	38.46%	27.18%
Adequate	36.54%	43.27%	28.16%
Very adequate	13.46%	13.46%	32.04%
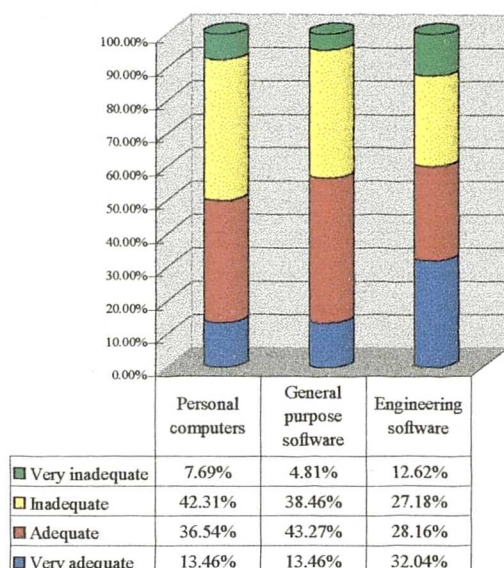
Chart 4.5.2.6H
Comment on the technical proficiency in computer skills of the graduates by employers

	Personal computer	General purpose software	Engineering software
Cannot comment	0.0%	0.0%	4.4%
Very inadequate	4.4%	6.7%	4.4%
Inadequate	17.8%	22.2%	37.8%
Adequate	71.1%	64.4%	46.7%
Very adequate	6.7%	6.7%	6.7%
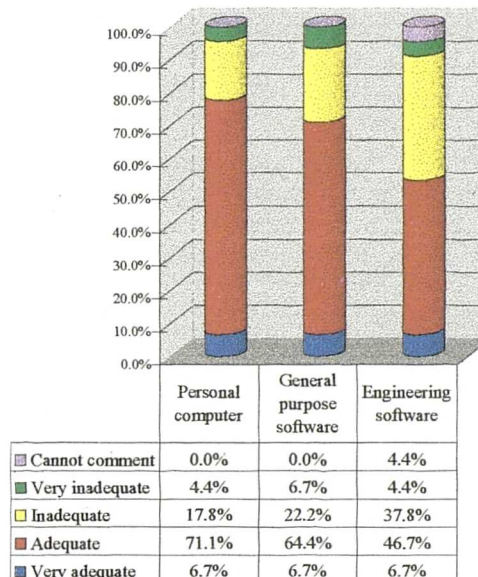
Table 4.5.2.6C   Chi-square Value for Comment on Computer Skills from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Personal Computer	11.11	3	0.011
General Purpose Software	6.78	3	0.079
Engineering Software	19.26	4	0.001

vi)   *Computer Literacy*

In this age of fast technology development, computer is almost a must in any type of work, especially technical work. So students must be taught to use personal computer and software. From the survey, 50% of the graduates said that the computer knowledge learned was inadequate, while the employers were satisfied with the graduates' ability to use personal computers. 78% of the employers said that the graduates' ability in this area was acceptable. Both the employers and graduates coincide on the ability of the graduates in using general purpose software.

An employer in the interview remarked :   'In this age of IT, the background knowledge in computer has to be strong and the teaching of computer and IT applications has to be intensified. Engineering analysis, design and solutions are helped by engineering software. It is recommended that the teaching in school, whenever possible, should make reference to the commonly used software to give students some idea or hands on experience of those software. This can enhance students' employability upon graduation'.

vii)   *Environmental and Safety Awareness*

Construction activities are often found disturbing the environment. They generate environmental nuisance in the form of noise, dust, muddy runoffs, and improper disposal of chemical waste. The construction industry is a notoriously dangerous industry with a high level of injuries and fatalities than other local industry. To improve this situation, one of the most effective approach is to ensure the man on

the job has the necessary awareness in environment and safety. The best way to achieve this is through teaching in school.

Table 4.5.2.6D   Chi-square Value for Comment on Environmental and Safety Awareness from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Environmental Concerns	3.62	3	0.459
Safety Issues	9.75	3	0.045

Most employers were satisfied with the graduates' environmental (56%) knowledge and concerns. This view coincides with that of the graduates. However, the view on safety issues from the graduates is independent from that of the employers.

Legislation stipulates that no one can work on construction site without holding a 'green card'. A green card is issued to a person in recognition of his/her attendance of a prescribed safety course or graduation from a course whose content has imparted the required knowledge of safety. This course curriculum is approved by the Labour Department as having met the required safety. During the discussion, participants had expressed their opinions on these issues and are quoted below.

Staff member (Illustrative) :

'The Department is authorized by the Labour Department of the HKSAR Government to issue the 'Green Cards' to the graduates of the course'.

External Examiner (Verbatim) :

'Congratulations to the Department. It is important for a vocational course to follow the relevant legislation and to up-grade its course curriculum meeting the requirements of the latest legislation'.

Advisory Board Member (Verbatim) :

'There is an increasing concern on environment. It is necessary to be aware of environmental impact. In many construction projects, it is required to make an environmental impact assessment before a project can be approved by the authority. Whenever appropriate, environmental concerns should be included in the lectures'.

This shows that the course has incorporated the required safety knowledge in the curriculum. To this extent, it has satisfied the local authority.

Chart 4.5.2.6I
Comment on the content on environmental and safety concerns by graduates

	Environmental Concerns	Safety Issues
Very inadequate	12.50%	11.54%
Inadequate	37.50%	38.46%
Adequate	38.46%	36.54%
Very adequate	11.54%	13.46%
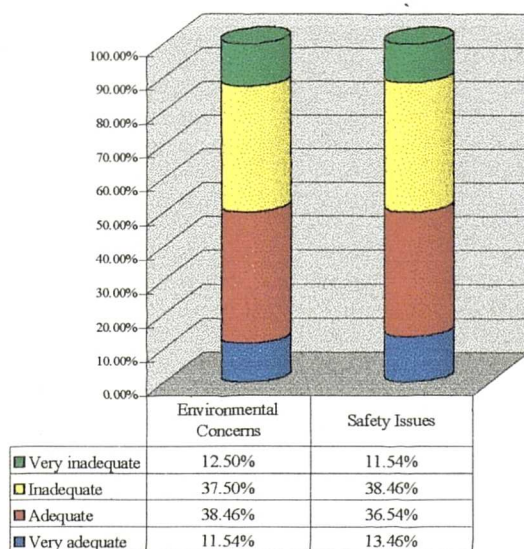
Chart 4.5.2.6J
Comment on the technical proficiency in environmental and safety awareness of the graduates by employers

	Environmental Concerns	Safety Issues
Cannot comment	2.2%	4.5%
Very inadequate	6.7%	4.5%
Inadequate	35.6%	31.8%
Adequate	44.4%	52.3%
Very adequate	11.1%	6.8%
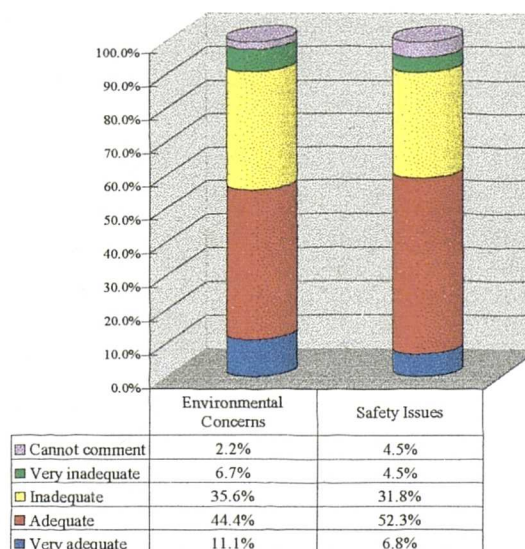
Chart 4.5.2.7A
Comment on the course in personal attributes by graduates

	Problem solving	Cooperation with others	Sense of responsibility	Ability to express	Initiative	Creativity
Very inadequate	12.50%	9.80%	17.31%	5.77%	17.31%	11.54%
Inadequate	47.12%	52.94%	45.19%	50.96%	38.46%	35.58%
Adequate	30.77%	28.43%	28.85%	39.42%	35.58%	38.46%
Very adequate	9.62%	8.82%	8.65%	3.85%	8.65%	14.42%
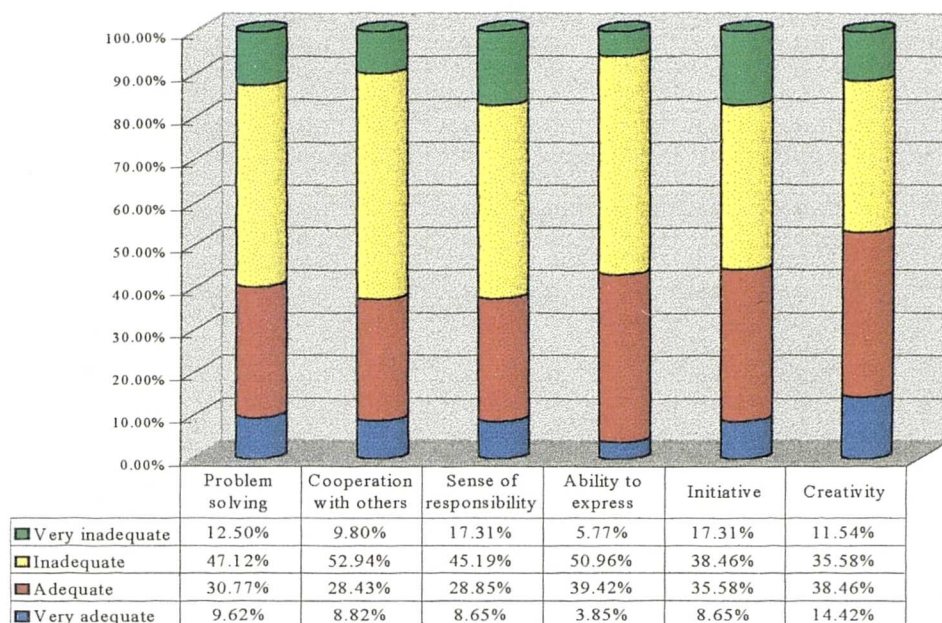
Chart 4.5.2.7B
Comment on the personal attributes of the graduates by employers

	Problem solving	Cooperation with others	Sense of responsibility	Ability to express	Initiative	Creativity
Cannot comment	19.6%	2.2%	8.7%	8.7%	10.9%	6.7%
Very poor	4.3%	4.3%	15.2%	6.5%	4.3%	4.4%
Poor	10.9%	17.4%	10.9%	28.3%	34.8%	26.7%
Good	47.8%	58.7%	41.3%	52.2%	43.5%	57.8%
Excellent	17.4%	17.4%	23.9%	4.3%	6.5%	4.4%
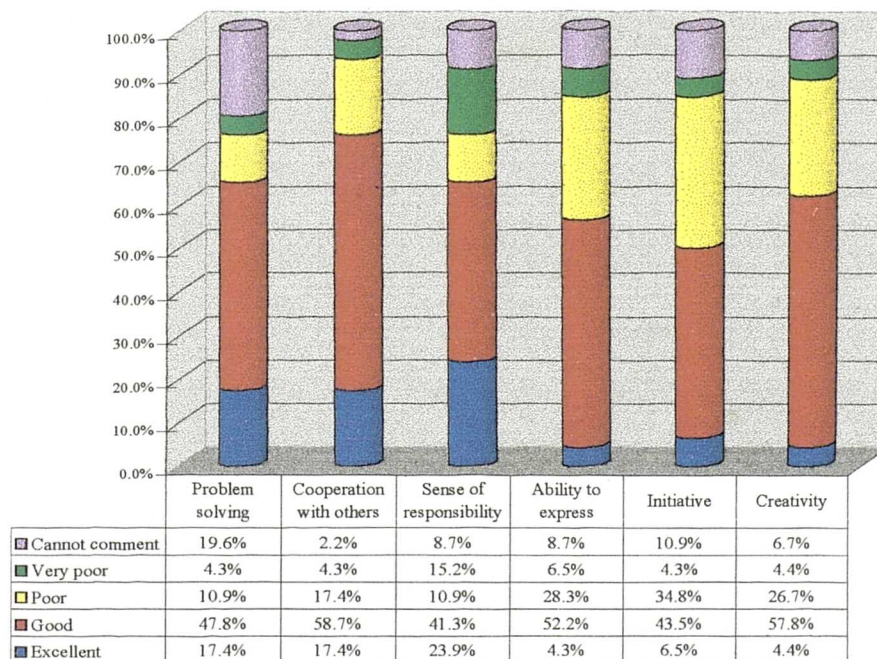
4.5.2.7 Personal Attributes

Employability and performance are to certain extent, affected by the personal attributes. Comments from the graduates and the employers were quite different. More than half of the graduates thought that the personal attributes learned from the course including problem solving (60%), co-operation with others (63%), sense of responsibility (63%), ability to express (57%) and initiative (56%) were inadequate. For creativity, the situation was better that only 47% considered inadequate. However, most of the employers seemed to appreciate the performance of the graduates in their personal attributes including problem solving (65%), co-operation (76%), sense of responsibility (65%), ability to express (57%), initiative (50%) and creativity (62%) with comments of good or even excellent by some. The above agrees with the chi-square tests as shown below in Table 4.5.2.7

Table 4.5.2.7   Chi-square Value for Comment on Personal Attributes from Employers and Graduates

	Pearson Chi-square	df	Asymptotic Significance
Problem Solving	38.29	4	0.000
Co-operation with Others	22.65	4	0.000
Sense of Responsibility	27.05	4	0.000
Ability to Express	14.03	4	0.007
Initiative	16.14	4	0.003
Creativity	14.76	4	0.005

Employers joining the interviews and discussion did agree that the graduates had good sense of responsibility as well as co-operating well with colleagues. Most of the graduates had the ability to solve structural as well as simple

geotechnical problems in their daily routine work. They were found relatively weak in solving construction problems. The graduates were also commented that they were too timid in handling matters that they had not come across before. In this situation, they tried to refer the problem to their superior or a more experienced colleague.

4.5.2.8   Integration of the Subjects

Chart 4.5.2.8A
View of academic staff on the quality of the course

| | Excellent | Good | Need improvement |
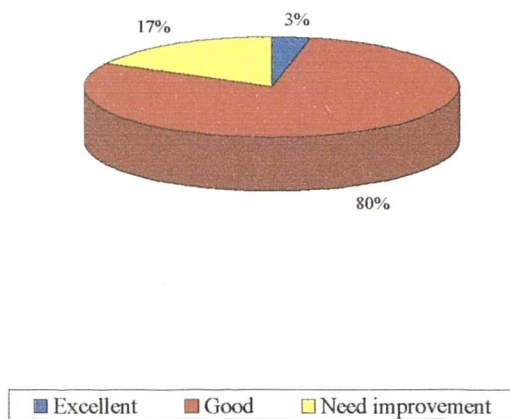
Chart 4.5.2.8B
View of academic staff on integration of the subjects

	Horizontally	Vertically
Very poorly	0.00%	0.00%
Poorly	0.00%	10.71%
Well	55.17%	42.86%
Very well	44.83%	46.43%
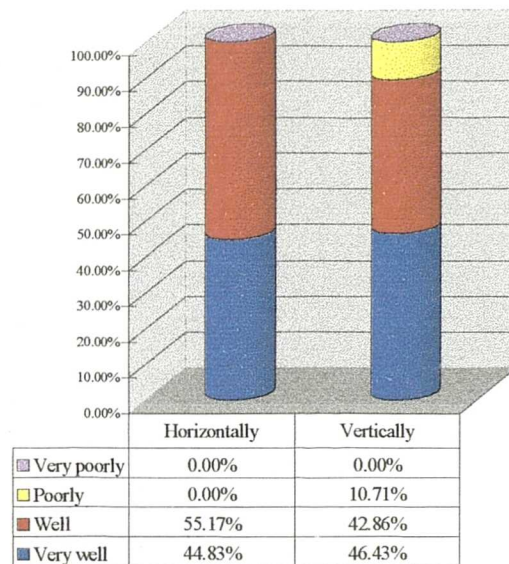
There are several subjects in the course. To be a good quality course, these subjects have to be well co-ordinated vertically with themselves in the different stages of study and horizontally with others in the same stage of study. That is, subjects have to be 'integrated' both horizontally and vertically. 83% of staff expressed their appreciation of the quality of the course. All of them said that the subjects in the course were horizontally integrated and about 90% of them said

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vertically integrated. The external examiners concurred, based on their experience on

vetting the examination papers and the answers in the examination scripts.

4.5.2.9   Contribution to Further study

To what extent can the course contribute to further study? 23% of the

graduates expressed that over 45% of the content in further study had been covered by

this course. 35% of them said the cover was between 30% to 45%. Yet 76% of them

considered the course was useless to the further study.

Chart 4.5.2.9A
View of graduates on the coverage of the
further study course by this course

| ■ Above 45% | ■ 45-30% | □ 30-15% | ■ 15-0% | □ 0% |
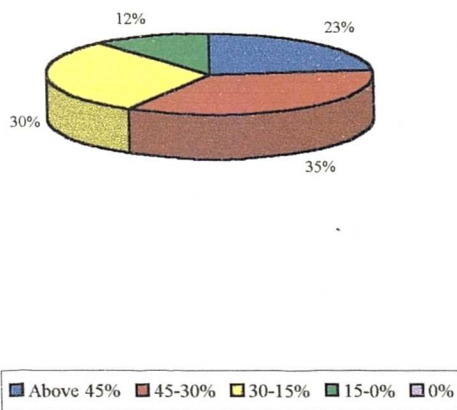
Chart 4.5.2.9B
View of graduates in further study on difficulty of the further study course
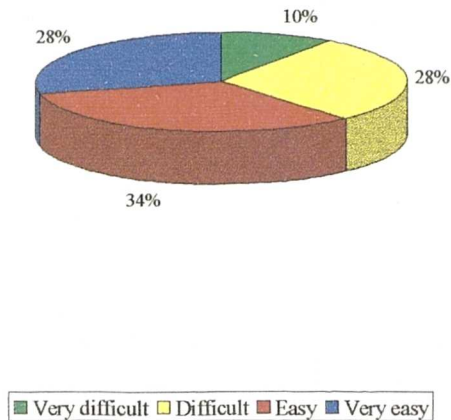
Chart 4.5.2.9C
View of graduates in further study on teaching methodology used in the further study course as compare with that in the course

10%
28%
28%
34%

| ■ Very difficult | □ Difficult | ■ Easy | ■ Very easy |

8%
15%
30%
47%

| ■ Even worse | □ Same | ■ Better | ■ Much better |
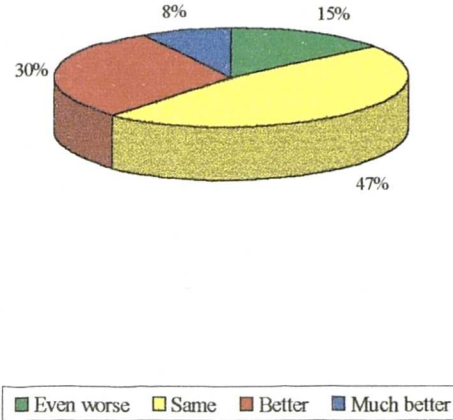
Even though the majority of the graduates said that the course was not helpful for further study, 62% found that the further study course was easy. 38% said that the teaching methodology used in the further study course was better than that used in the course. 47% said the teaching methodology was the same in both courses. 15% even said the teaching methodology used in this course was better than that used in the further study classes. Despite the diverse opinions of the graduates, it is agreed that the course has provided the foundation for further study. It also provides the information for the graduates to compare the teaching methodologies.

4.5.2.10 Course Management and Administration

The other factor that would affect the quality of the course is management/administration of the course. About 80% of the staff considered the current course management/administration was efficient and effective. About 76% of them believed that the current course management system could provide the quality

assurance. 34% of them also believed that the management system could greatly promote the quality of the course, while 45% thought that it could do so to some extent only.

Chart 4.5.2.10A
View of academic staff on the current course administration/management
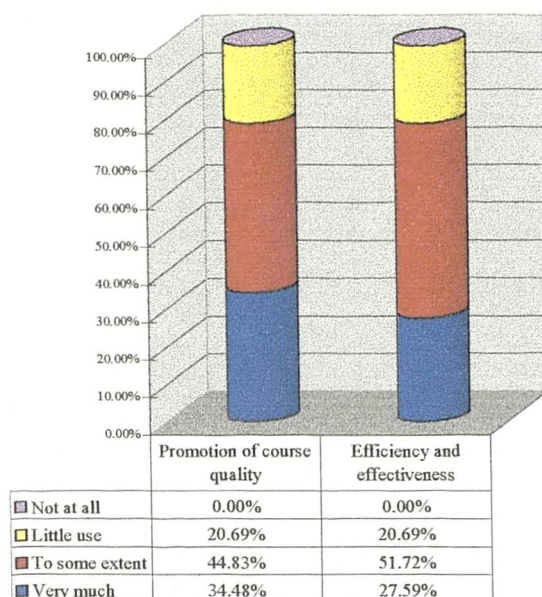
Chart 4.5.2.10B
View of academic staff on quality assurance of the course by the current course administration/management

	Promotion of course quality	Efficiency and effectiveness
Not at all	0.00%	0.00%
Little use	20.69%	20.69%
To some extent	44.83%	51.72%
Very much	34.48%	27.59%

Excellent ■ Good □ Poor ■ No idea □ Need change / improvement
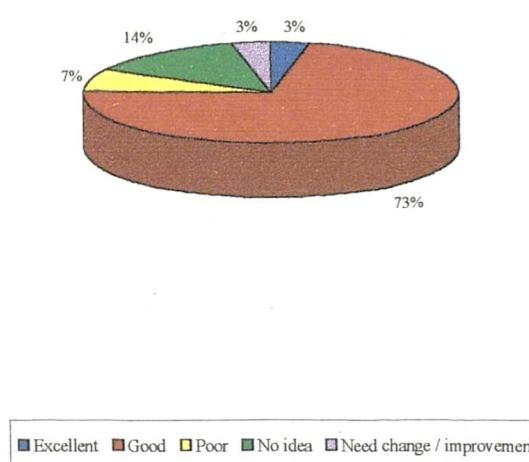
4.5.2.11 Staff Workload

The current course administration/management was considered placing heavy workload on staff. 53% of the staff opined that the workload in teaching was heavy and 21% of them considered it very heavy. 32% of them felt that the administrative workload was too heavy. 88% of the staff needed 2 to 6 hours per week to prepare their teaching material. 7% of them used more than 6 hours to do the preparation. In addition, they had to mark the assignments. 65% of the staff used 2 to 6 hours per week to mark the assignments, while 32% of them used more than 6 hours. Combining the two, it was found that 51% of the staff needed 6 to 9 hours per

week, while 35% needed more than 9 hours per week to discharge their work in lecture preparation and marking assignments.

A staff member in the interview expressed : 'I would like to undertake staff development. I like to know more about the construction methods for civil engineering projects. Attachment to a construction firm is an ideal approach. But sorry, I don't have the time'.

The heavy workload in preparation for teaching, marking of assignments and administrative work hinders the participation in staff development. This indirectly imposes adverse effects to the quality of the course.

Chart 4.5.2.11A
Time spent on marking the assignments/coursework by academic staff
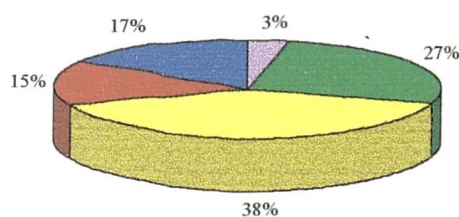
Chart 4.5.2.11B
Preparation time for teaching material by academic staff

☐ Less than 2 hours	■ 2 to less than 4 hours
☐ 4 to less than 6 hours	■ 6 to less than 8 hours
■ 8 hours and more	

☐ Less than 2 hours	■ 2 to less than 4 hours
☐ 4 to less than 6 hours	■ 6 to less than 8 hours
■ 8 hours and more	

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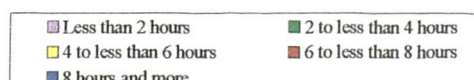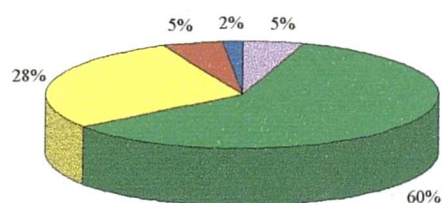
Chart 4.5.2.12A
View of academic staff on their workload
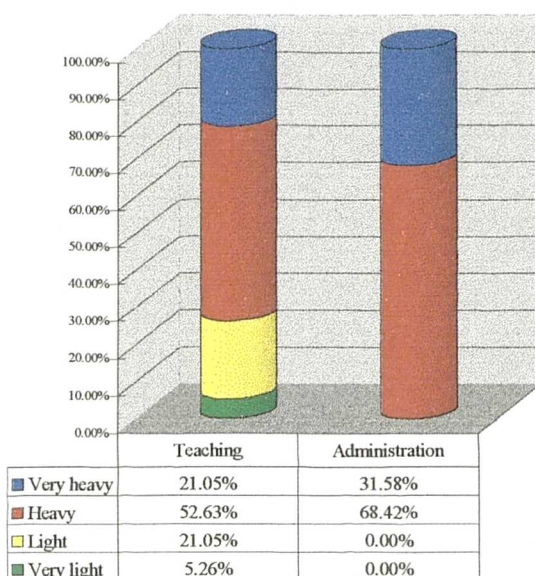
Chart 4.5.2.12B
Involvement of academic staff in consultancy/outside work

	Teaching	Administration
■ Very heavy	21.05%	31.58%
■ Heavy	52.63%	68.42%
□ Light	21.05%	0.00%
■ Very light	5.26%	0.00%

	Consultancy work	Outside work
■ Yes	31.58%	68.42%
□ No	68.42%	31.58%
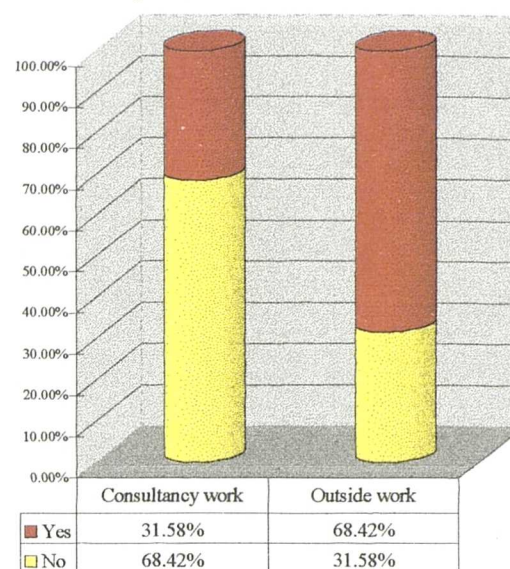
4.5.2.12 Staff Quality

Quality of the staff is another important factor influencing the course quality. Apart from the required qualifications, the personal attributes such as contact with industry and the profession is also a key aspect in staff quality. Staff contact with industry and the profession is through various activities, such as consultancy services to industry/profession and involvement in relevant professional bodies. Due to heavy teaching and administrative work, not too many staff are actively making contact with industry and the profession. 16% of staff were involved in the activities of related professional bodies. 32% of them had involvement in related consultancy services. Though quite a high percentage (68%) of them were engaged in outside work, yet 95% of the outside work was in teaching part-time evening classes of other courses run by the department.

Similar to the remark made in the previous section, the heavy workload of staff hinders their participation in professional body's activities and involvement in

relevant consultancy services. This would deprive the staff's opportunity to keep themselves abreast of the development of the industry and the profession. Thus the quality of the staff would be compromised.

4.5.3   Teaching Aids and Methodology

Traditional didactic approach of teaching with questions and answers was mostly adopted in lectures.   60% of the staff did allow students to ask questions during lectures but not in an interactive approach.

Chart 4.5.3.1A
Frequency of academic staff allowing
students to ask questions in lectures

Legend: ■ Very often   ■ Sometimes   □ Seldom   ▨ Not allowed
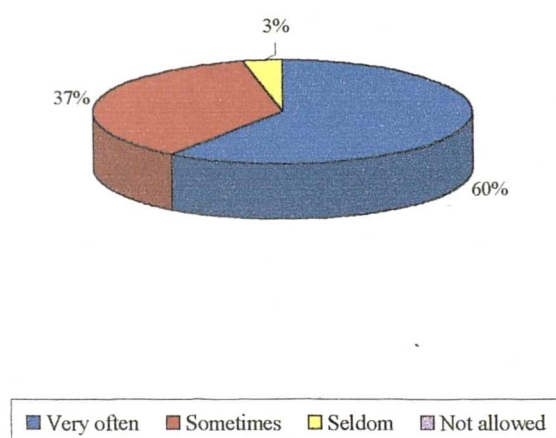
4.5.3.1   Teaching Aids

Overhead projector was the key tool used as the teaching aid by staff. 62% of the staff used overhead projectors for more than 75% of the lecture and tutorial time.   15% of them used overhead projector in 50% - 75% of their teaching.

Chart 4.5.3.1B
Percentage of using Overhead Projector as teaching aids in lectures/tutorials
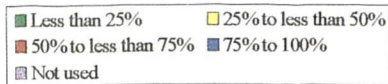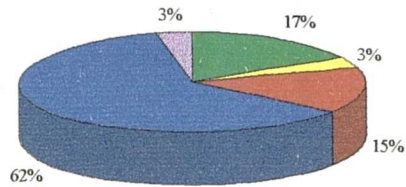
Chart 4.5.3.1C
Percentage of using video/film/slides as teaching aids in lectures/tutorials

Legend (Chart B):
■ Less than 25%   ☐ 25% to less than 50%
■ 50% to less than 75%   ■ 75% to 100%
▨ Not used

Legend (Chart C):
■ Less than 25%   ☐ 25% to less than 50%
■ 50% to less than 75%   ■ 75% to 100%
▨ Not used
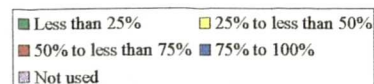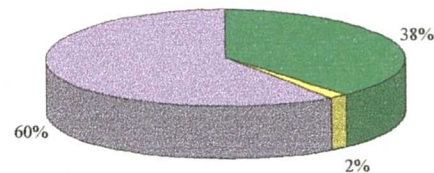
From the survey, it was revealed that about half of the staff never used computer to assist teaching. 60% of them did not show slide/film/video during lectures and tutorials. 88% had not included internet/web-sites in their teaching delivery file. Despite such a low profile of computer application in teaching by staff and the poor provision of computing facilities by the college, more than 50% of the students supported the use of IT in teaching. 70% of them preferred to get the teaching materials through internet.

4.5.4   College Facilities and support

College facilities and support are the facilitators to student learning and quality teaching. The survey probed into the influence of those facilitators that could contribute to the quality of the course.

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4.5.4.1 Library facilities and Services

Library service is one of the key facilitators. It was found that 67% of the students often used the library facilities. Only 55% of them read or use the library books. 70% of them commented that the opening hours of the library were too short and 78% commented that the sitting places in the library were insufficient. 61% complained that the library was too noisy.

Chart 4.5.4.1A
View of students on sufficiency of sitting place in the library
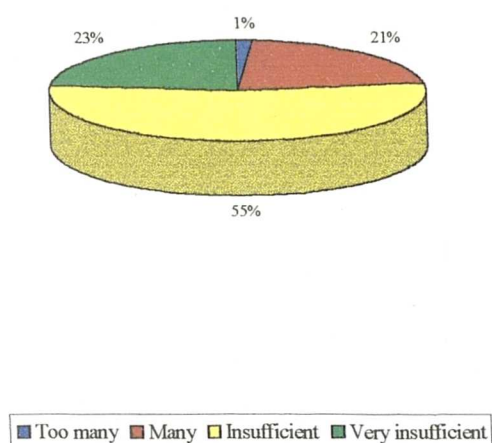
Chart 4.5.4.1B
Frequency of students using the library services

	Library books	Library facilities
Never	2.88%	1.08%
Sometimes	41.73%	31.77%
Often	43.17%	44.40%
Very often	12.23%	22.74%

Too many Many Insufficient Very insufficient

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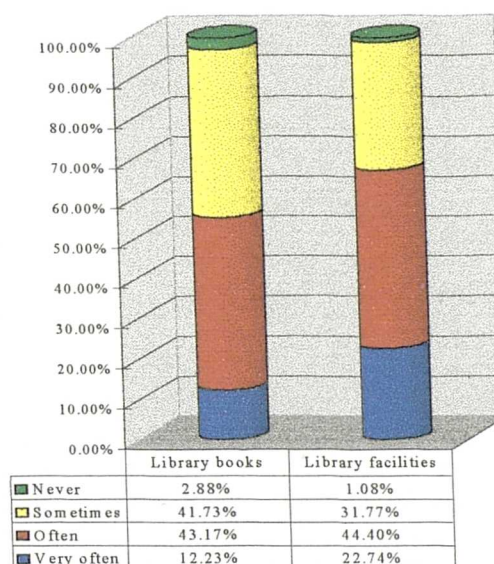
Chart 4.5.4.1C
View of students on the noise level in the library

35% 4% 15%

46%
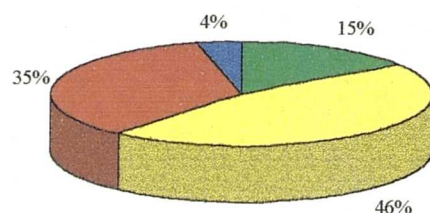
Too noisy □ Noisy ■ Quiet ■ Very quiet

Chart 4.5.4.1D
View of students on the opening hours of the library

28% 2% 16%

54%
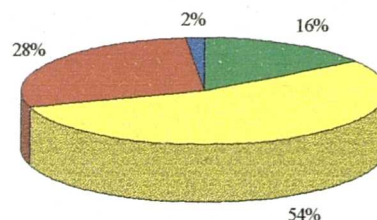
Too short □ Short ■ Long ■ Too long

Chart 4.5.4.1E
View of students on the services of library staff

18% 5%

32%

45%
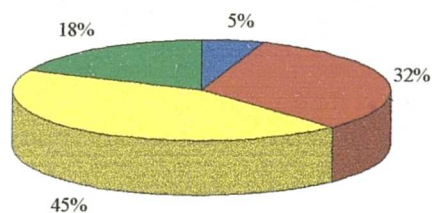
Very helpful ■ Helpful
□ Unhelpful ■ Very unhelpful

The above comments from the students were responded to by the staff and discussed during the interview with the staff. Majority of the staff did agree that the

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opening hours were too short. Staff commented that the library should be open for some hours during Sundays and general holidays. On weekdays, it should be opened up to 9.^{30} pm. They did request to improve the printing services/facilities. They commented that some library staff were bureaucratic, making the management system and policy unhelpful to the users.

Staff held different opinions on the noise level and the sitting places. Staff considered the volume of books in the library was sufficient. Apart from the comments through the questionnaire, students in the discussion did comment that the number of copies of some common books was not sufficient. A staff responded that it was not practical to keep too many copies to satisfy the students' request. He recommended to keep a couple of copies of those books in the reference list, so that all students can have the chance to read as books kept in reference were not allowed to be borrowed out. As a whole the library facilities is considered good and has provided strong support to the college.

4.5.4.2   Computer facilities

With the technology advancement in today's life, the computer is an important means of learning and teaching. So computing facilities is another key facilitator to course quality. 68% of the student were not satisfied with the provision of computing facilities in the college. 53% of the staff considered that the provision was inadequate.

Chart 4.5.4.2A
Comment of students on college computing facilities
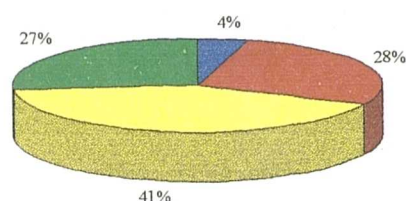
Chart 4.5.4.2B
Comment of academic staff on computer facilities provided by college

| ■ Very satisfied | ■ Satisfied |
| □ Unsatisfied | ■ Very unsatisfied |

| ■ Very adequate | ■ Adequate |
| □ Inadequate | ■ Very inadequate |
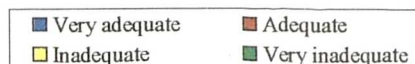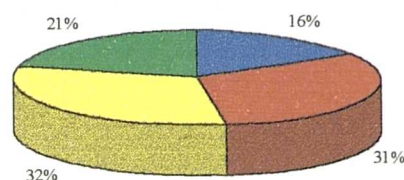
In contrast to the provisions in college, 94% of the students had a computer at home and 64% of them often "surf the net". It showed that almost all students have access to a computer and most of them had a certain level of computer literacy to search information from internet. Students requested the college to allocate more free access time to the computer rooms, so that they can make better use of the computing facilities of the college.

4.5.4.3   Use of IT in Teaching and Learning

Use of IT in teaching is a new trend in education. 58% of the students expressed their support for this. Over 70% of them preferred to get the course materials, such as course information, lecture notes and tutorial & laboratory instruction sheets through internet. Such support from the student creates a strong impetus to adopt IT in teaching.

Chart 4.5.4.3A
View of students toward IT teaching

■ Strongly support	■ Support	□ Welome
■ Neutral	□ Not support	
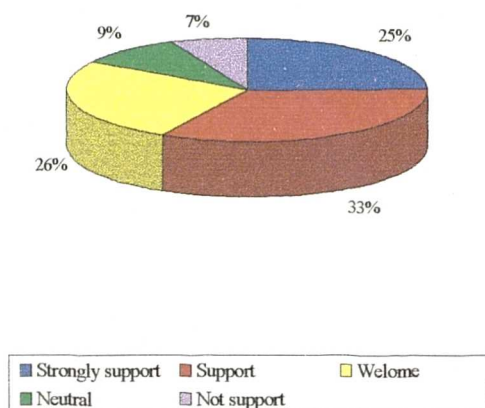
Chart 4.5.4.3B
Students' expectation on IT Teaching

	Computer at home	Obtain "course information"	Obtain "Lecture notes"	Obtain "Tutorial and laboratory sheets"
■ Yes	94.18%	82.48%	71.32%	76.56%
□ No	5.82%	17.52%	28.68%	23.44%
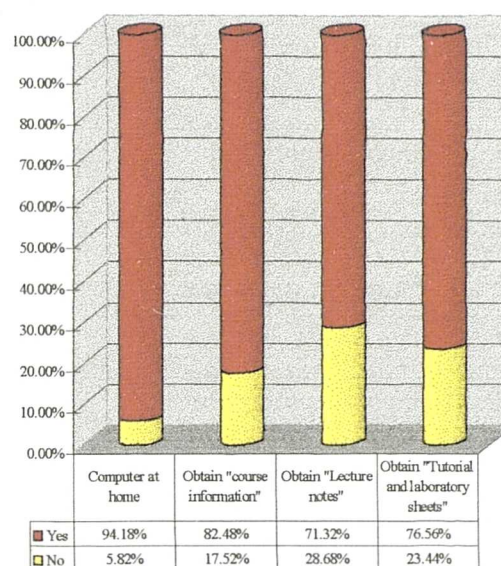
94% of the staff showed their support for the use of IT in teaching. Despite 55% of them saying that it was easy to prepare the teaching material in IT approach, 89% of them said that the preparation work was very time consuming. However, 63% of them agreed that the IT approach could, to some extent, improve the teaching and learning quality of the course. 95% and 79% of the staff were familiar with MS Office and Netscape/Internet Explorer respectively. This showed that staff were able to prepare lecture notes and documents by computer and search information through internet. However, only 21% of the staff were familiar with Visual Basic. Thus most of the staff were unable to write computer programs.

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Chart 4.5.4.3C
Frequency of students "surf the net"

28% 8% 24%
40%

Very often Often Sometimes Very Seldom
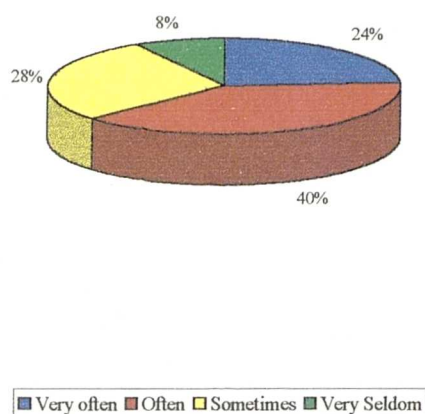
Chart 4.5.4.3D
Computer proficiency of academic staff

	MS Office	Visual Basic	Netscape / Internet Explorer
No knowledge	0.00%	52.63%	0.00%
Little knowledge	5.26%	26.32%	21.05%
Familiar	52.63%	15.79%	57.89%
Very familiar	42.11%	5.26%	21.05%
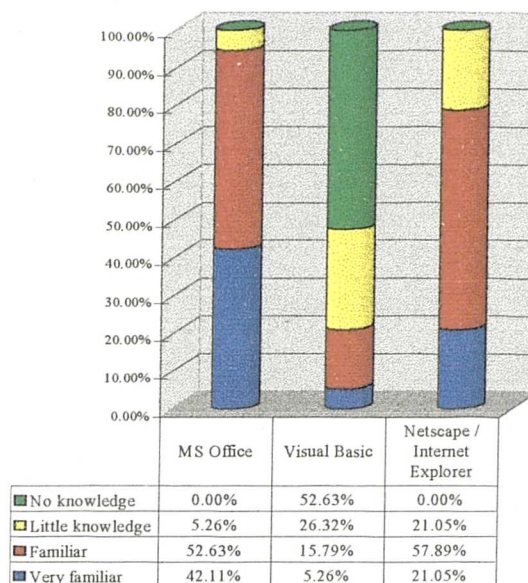
In line with the comment on the inadequacy of computing facilities in the college, 47% of the staff felt that the use of IT in teaching would cause problem in course administration. This showed that some staff (about 50%) had no confidence in using computer or IT in administration and management due to inadequate support in facility from the college.

Chart 4.5.4.3E
View of academic staff on preparation of teaching materials in IT approach
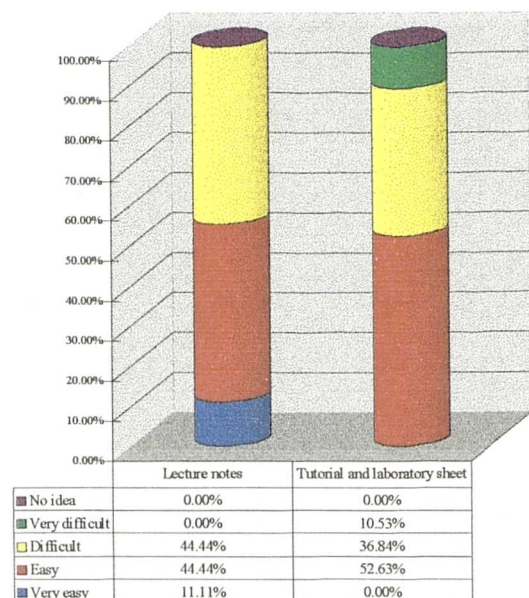
Chart 4.5.4.3F
View of academic staff on enhancing the course quality in using IT approach

	Lecture notes	Tutorial and laboratory sheet
No idea	0.00%	0.00%
Very difficult	0.00%	10.53%
Difficult	44.44%	36.84%
Easy	44.44%	52.63%
Very easy	11.11%	0.00%

Very much ■ To some extent □ Not at all ■ Even worse ■ No idea
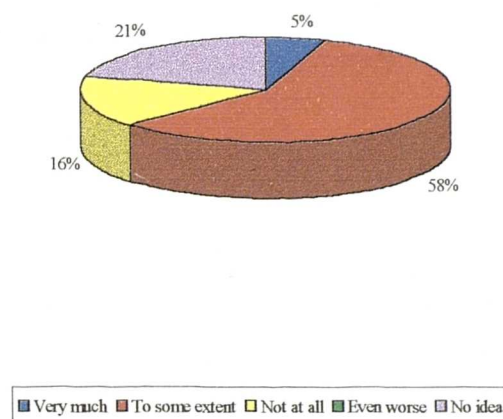
Chart 4.5.4.3G
View of academic staff on creating problem to course administration/management in using IT approach in teaching
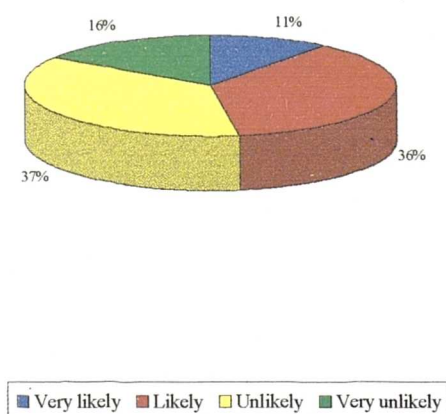
Chart 4.5.4.4A
View of students on the services of SAU

■ Very likely ■ Likely □ Unlikely ■ Very unlikely

■ Very helpful ■ Helpful □ Unhelpful ■ Very unhelpful
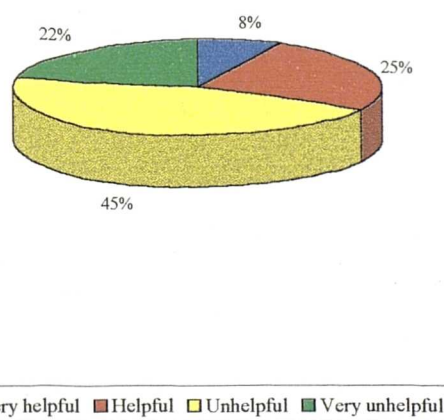
4.5.4.4   Student Counselling facilities

Apart from teaching in classrooms, students would need help and counselling from school in other aspects. There is a unit (SAU) in the college

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providing help and counselling to students who may need it. 67% of students said that the unit could not provide the help they looked for.

Survey of the staff in the interview showed different views. Staff commented that the unit had done a very good job in arranging and managing recreational programs for the students. There were cases that problem students received excellent counselling from staff of this unit. Staff did remark that due to constraints from the organisation's policy and regulations, they themselves in many cases could not meet and satisfy the students' requests. In connection with this, it was found that the staff of this unit had very good relationship with the students as well as among the staff themselves.

Chart 4.5.4.4B
Relationship of academic staff with students and colleagues

	With students	Among staff in department	Among staff in College
Very poor	0.00%	0.00%	0.00%
Poor	5.26%	5.26%	5.26%
Good	52.63%	47.37%	21.05%
Very good	42.11%	47.37%	73.68%
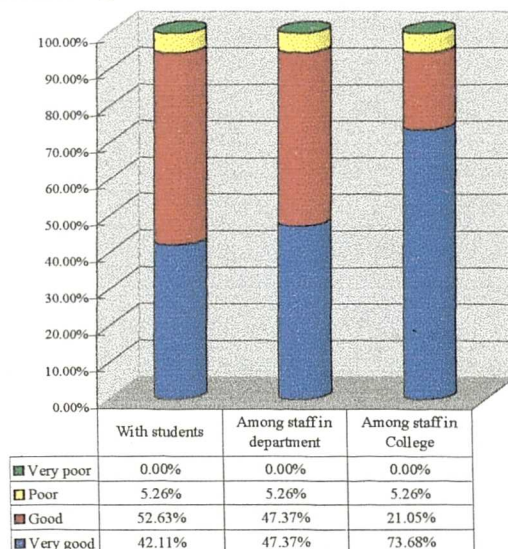
4.5.4.5   Support on Staff Development

Apart from students, staff also need encouragement as well as support in their work. The support services provided to the staff by the college were considered

inadequate by 74% of the staff. The support for research work was even worse. 78% of the staff expressed that the support on research work was inadequate. The support on staff development was also considered inadequate by 53% of the staff. The views on the support from management was divided. 47% of them considered the management support was inadequate, while 53% held opposite opinion on this. From the interviews and group discussions, it is evident that staff development is essential to the quality of the course. Despite the comments, through the questionnaire, that there is inadequate support for staff development, a pragmatic approach has to be worked out to make staff development a reality.

Chart 4.5.4.5A
Comment on the support from management by staff

	Support services provided	Support from management
■ Very inadequate	15.79%	15.79%
□ Inadequate	57.89%	31.58%
■ Adequate	21.05%	42.11%
■ Very adequate	5.26%	10.53%
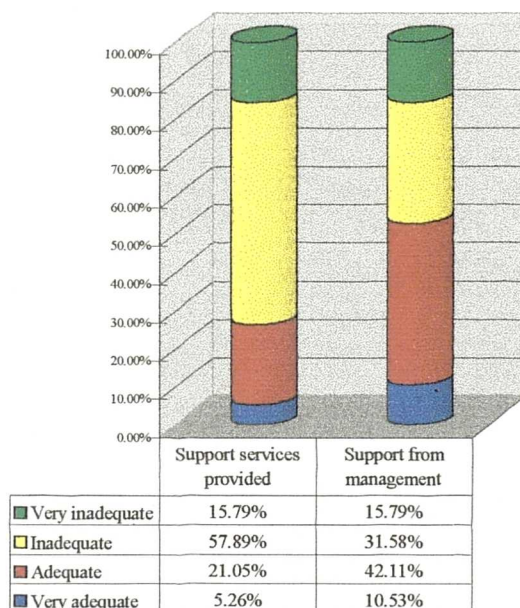
Chart 4.5.4.5B
View of staff on the support from management on research and staff development

	Staff development	Research
□ Inadequate	52.63%	77.78%
■ Adequate	47.37%	22.22%
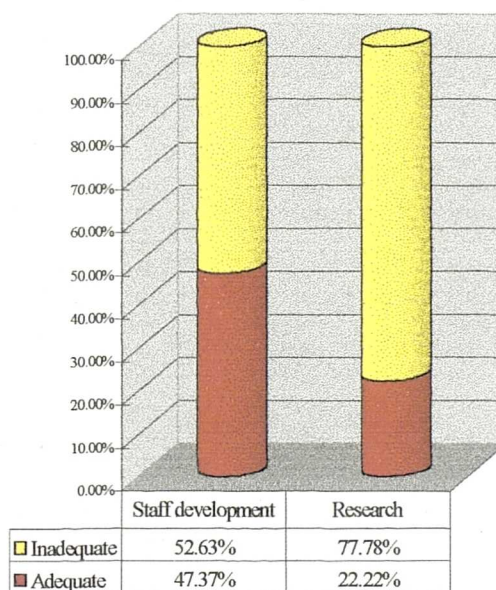
4.6   The Quality System (ISO 9000)

4.6.1   Introduction

To bring together the various aspects of quality in education discussed in

this chapter, the ISO 9000 system of quality management now widely used in industry is briefly introduced and survey findings discussed. The possible application of this system to education could be considered.

4.6.2   The ISO 9000 System

ISO 9000 is a quality management system that has been widely implemented in industry. It is of interest if the system could be introduced to education. Before making an in-depth consideration on this, it would help if we can have feedback on the following issues:

- To what extent the staff are familiar with the system?

- Would the system improve the quality of the course (teaching and learning)?

- Would the system improve the quality assurance of the course?

- Would the system improve the administrative efficiency and performance?

- Would the system enhance reputation?

Questions concerning the above issues were included in the questionnaires of this research. All data obtained were analysed. The analysis was not restricted to those responses which were familiar with the system. The objective is to get a general view of the academics on applying the system to education. Their actual knowledge of the system is not important. It was found that about three quarters of the staff had some knowledge of the system and knew what the system was about. The comments made by them should be considered and the following findings were obtained:-

(i)   Familiarization with the system -- only 32% of the staff were familiar with the system. 42% had little knowledge of it and 26% even knew nothing about it.

63% of staff did not agree to run the ISO system in education, though 58% of them

supported the system to be implemented in industry.

Chart 4.6A
View of academic staff on implementing ISO
9000 in education and construction industry

	Educational organization	Industry in Hong Kong
☐ No idea	26.32%	10.53%
☐ No	63.16%	31.58%
■ Yes	10.53%	57.89%
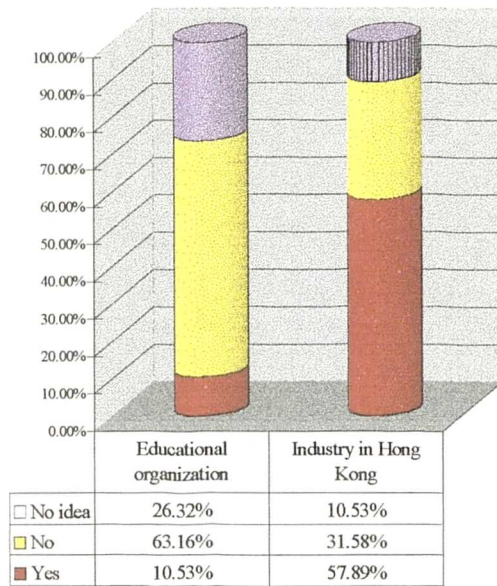
(ii)   Quality Improvement -- 32% of the staff did not believe the system could

improve the quality of teaching and learning. All staff worried that the

paper work would be increased a lot upon implementation of the system.

Chart 4.6B
Staff's view of ISO 9000 on improving the quality of teaching and learning
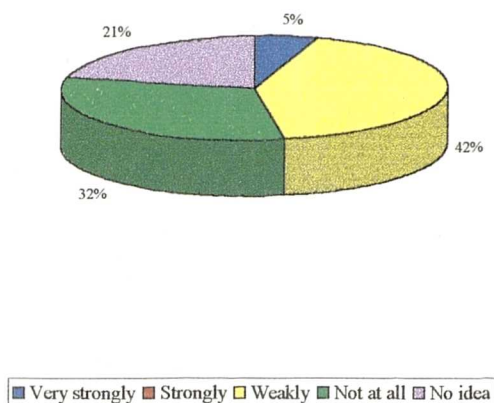
Chart 4.6C
Staff's expectation of ISO 9000 on improving the quality assurance

| Very strongly | Strongly | Weakly | Not at all | No idea |

| Even worse | Not at all | To some extent |
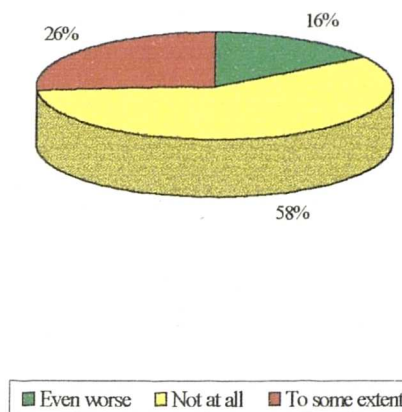
Chart 4.6D
Staff's expectation of ISO 9000 on improvement of administrative efficiency

Very much	To some extent
Little use	Not at all
No idea	
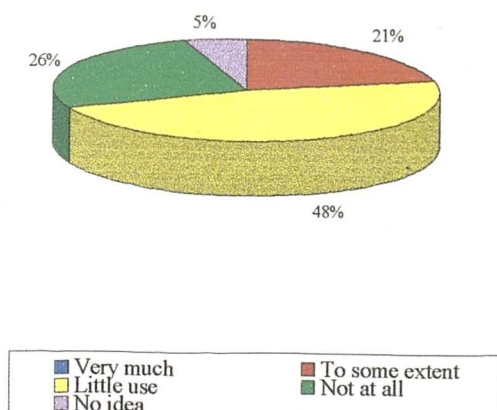
(iii)   Quality Assurance --   58% of the staff did not anticipate the system would improve the quality assurance of the course. 16% thought that the system might cause damage to the quality assurance.

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(iv)   Administrative efficiency and performance -- 21% of the staff thought that the system could, to some extent, improve the administrative efficiency and performance. 74% of them anticipated no effect in this respect.

(v)   Reputation -- Inspite of the negative response, more than half, 58% of staff did believe that implementation of the system could enhance the reputation of the organisation.

The survey also extended to the employers who employed our graduates. 57% of these employers have ISO 9000 certification. It is required by the local construction authority that firms doing public construction projects must have ISO certification. Firms engaged in large private projects normally are also engaged in public projects. Response from employers with ISO certification were based on their experience under the ISO system, as well as by comparison of the situation before and after certification. Those employers without certification might have responded according to what they have heard or based on their personal opinion. Thus the responses from this group of employers are considered not from experience and factual. The analysis had excluded the data from firms without ISO certification.

Reviewing the survey data, it was seen that slightly over 50% (55%) of the employers with ISO certification found the cost of operation could be reduced by the system, while 61% of them said that the system improved the operation efficiency. This is in line with the opinion on the quality output that 66% of them opined that the quality could be improved. However, on the profit aspect, less than 50% of them agreed that the profit could be increased.

Results of the survey revealed that not too many academic staff were familiar with the ISO 9000 quality system. Most staff did not have the confidence that the system could improve the quality of the course of study or could provide the quality assurance to such. This quality system appears not well received by academic staff despite of its popularity in industry.

Chart 4.6E
Comment on the effect of ISO 9000 on cost of operation by employers
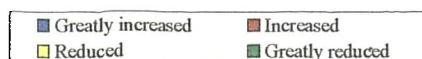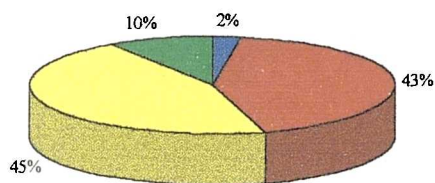
Chart 4.6F
Comment on the effect of ISO 9000 on operation efficiency by employers

| Greatly increased | Increased |
| Reduced | Greatly reduced |

| Greatly improved | Improved |
| Reduced | Greatly reduced |
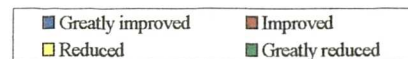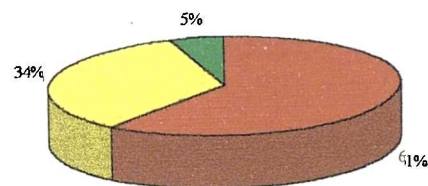
Chart 4.6G
Comment on the effect of ISO 9000 on quality of output by employers
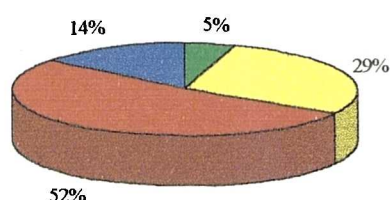
Chart 4.6H
Comment on the effect of ISO 9000 on profit/productivity by employers

| ■ Even worse | □ Reduced |
| ■ Improved | ■ Greatly improved |

| ■ Greatly increased | ■ Increased |
| □ Reduced | ■ Greatly reduced |
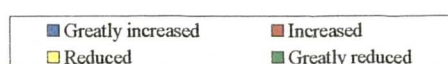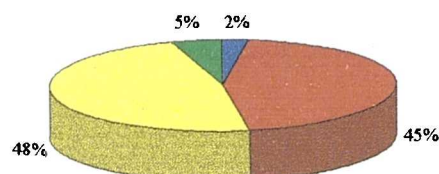
4.7   Summary

This chapter 4 has presented the detailed results of the research work on the quality of course being offered in Hong Kong for the Higher Diploma in Civil and Structural Engineering. It has sketched the historical background to the development of the current course content and to related questions on staff, students, curriculum development, standards and management. A special section has been devoted to the research on the effects of the pre-entry qualifications, since numbers of students have entered the course with school-leaving qualifications higher than required.   Account has also been given of various support systems for quality, and in conclusion the industrial system of quality management, ISO 9000, has been touched on in its possible relation to education.

Chapter Five   Conclusions

5.1   Summary of Research Findings

This chapter lays out a summary of the research findings in changing curriculum, certain effects of admission criteria, and the three areas of quality, appropriateness, fitness-for-purpose, teaching and learning, for the vocational course for higher technicians. The findings and discussions suggest that a quality model for vocational education courses can be formulated, and propose four essential categories. The chapter concludes with a description of the limitations to the study and some recommendations for future further research in the area.

5.1.1   The Changing Curriculum

Study on the changes in the curriculum was a qualitative analysis of the curricula of the higher technician course in the last twenty odd years under different operations. There have been relays of operators, one taking the baton from the other at the instruction of the government. The course objectives have remained unchanged. However, the curricula of the courses have been revised many times throughout these years, to suit changes in education policy and the needs of society. The significant changes are :

(i)   Contact Hours and Modes of Delivery

The total teaching contact hours have been reduced by 30%. In detail, lecture hours have been substantially reduced while tutorial, workshop training and project classes have greatly expanded. This change has been under the impetus of the modern education concept "learning to learn". Also the mode of learning delivery for

technician education has changed to learning through practical illustrations and problem solving. Workshop training is now an essential element of the course. Students have to go through a 35 day practical training programme in the training centres of the training authority of the construction industry (TACI) which have full scale construction operations to be carried out under site conditions by the students. This training provides students with hands-on experience of various craft skills in the industry and introduces them to the concept of safety and quality of work.

Apart from craft skills, there are other aspects requiring training under real site conditions and environment. The recommendations made in the Construct for Excellence Report, 2001 state that local tertiary institutions have to enhance the curricula of construction-related courses by providing more opportunities, preferably in the form of a structured programme, for students to acquire site experience (p.172). Following the idea of developing virtual laboratories in various fields, the setting up of 'practice-sites' and 'practice projects' is suggested, simulating real site conditions and construction environment for students to learn and practice. In view of the success of 'virtual laboratories' and 'practice-firms' operated in other sectors of education, this idea of practice-sites and projects would have the potential to achieve the goal of incorporating more practical elements in the course.

(ii)   *Categorised Subject Grouping*

These changes are in response to socio-economic and technological changes, meeting the expectations and demands of the students and the employers, or in globalised terms, of society in general. Of course, there have been minor cases of making adaptation to certain unique situations at a particular period of time, eg. The case of the 'Engineer in Society' examination.

(iii)   *Environmental, Safety and Quality Awareness*

In society today, there is great concern for environment, safety and quality. It has been pointed out by the Construction Industry Review Committee, in its report (2001) that the construction industry is amongst the most dangerous of all industries (p.15). The Committee also remarks that construction activities are inherently disturbing to the environment, and that the industry is rife with examples of substandard work, shoddy workmanship, cost overruns and project delays (p.23-24). To keep the course in pace with the development of society, the course curriculum has to put heavier weighting on these aspects of knowledge. Thus teaching hours are increased to incorporate these topics.

5.1.2   Effect of Admission Criteria

The study on the effect of pre-entry qualifications is for the purpose of laying ground work for the planning of future new curricula in response to the proposed education reform of secondary education in Hong Kong. The statistical analysis of the students' performance showed that the 'Form 7' students were performing better than the normal (Form 5) students. This performance significance is stronger in the early years of study of the technician course. There is an argument that the special students (Form 7) are subject to more stringent criteria for entering into Form 7. That gives rise to the plausible argument that the difference in academic achievement is attributable to higher student calibre rather than the effect of the added value of Form 7. So we can only conclude at this time that the better performance in examination by the special students (Form 7) is to be attributed to either or both the added value of Form 7 and a higher student calibre resulting from the admission criteria of Form 7.

5.1.3 Course Quality

The major part of the research is the study on the quality of the course. This was carried out by both quantitative and qualitative studies. Quality, as discussed in Chapter 2, Literature Review, is difficult to define. It may mean different things to different people at different times. Quality of a course covers a wide spectrum of issues concerning both the customers and the providers.

5.1.3.1 Appropriateness

Providers are concerned about the appropriateness of the course. Appropriateness relates to the quality of conformance to admission criteria and the objectives of the course. In the study, students and graduates do express that they are satisfied with the course and consider it is appropriate for them. This indicates that the admission criteria have provided the mechanism for admitting the right students to the course. The course curriculum and the teaching and learning have satisfied the students, according to their response to the study. The responses from the graduates and the employers to the study are also positive as to the appropriateness of the course. Such positive responses are strong supports to the quality conformance to the course objectives. More than this is the satisfaction of the employers with the graduates' performance. This is a signal about the quality of 'fitness-for-purpose'.

Employment of the graduates extends to a wide spectrum of employers. This shows that the graduates are well received by the industry. The teaching has given such a wide coverage of knowledge and training that the graduates are employable in various sectors of the industry. The particular remarks made by the employers that 'your graduates are ready to work and require minimal guidance'; 'I like to recruit your graduates to do the drafting work' are strong supports for the

quality of 'fitness-for-purpose'. They also indicate the quality of conformance to requirements and standard. The academic staff, as the course provider do concur that the curriculum is relevant and the subject syllabi are appropriately meeting the aims and objectives of the course.

5.1.3.2 Student Learning and Performance

(i) Effect of Contextual Factors

Despite the students saying that the course is satisfactory and appropriate, most of them feel that the course is difficult to study. Some academic staff, based on the examination performance, also comment that the course is difficult for the students. The research performed on university students in Hong Kong by Drew (1998) suggests that student learning is much affected by contextual factors such as mode of assessment, workload amount, course syllabus, and teaching method (p.210). Entwistle and Ramsden (1983) claim that it is the students' perception of assessment demands that determine their approaches to learning. Students have said that they are faced with insurmountable workloads, limited time space and high examination pressure. Excessive workloads and examination anxiety cause stress and tension that could impair learning (Fransson, 1977; Marton & Saljo, 1984). These factors could also force students to resort to a superficial learning strategy such as rote-memorizing. (Drew, 1998 : 224). Workload amount has to be appropriate and relevant to the achievement of the course objectives that focus on high order learning outcomes. It is suggested that the negative cognitive and affective consequences caused by examination anxiety should be reduced. Undoubtedly, it is a controversial problem as to what could replace examination. It is not easy to provide better alternatives for demonstrating students' competence. Perhaps one of the ways could be by reducing

the weighting for examination results, assigning more instead to 'continuous assessment' which includes coursework assignments, quizzes, projects and class presentations.

Workload is one of the contextual factors affecting students' learning. The introduction of more practical elements to the course as discussed above has to be at the expense of those subjects and topics from which knowledge is not directly drawn for the performance of the graduates' normal work and duty. By a similar argument, the course should not be stream-lined and concentrated on particular subjects or topics at too great depths. This would compromise the students' scope of knowledge if there is no overburden to students' study. Then the employability of the graduates would be compromised.

(ii)   *Effect of English Proficiency*

Students who experience inadequate English proficiency are found to adopt rote-memorization and a surface approach to learning (Drew, 1998 : 205). Analysis of the survey and interview data reveal that more than half of the students admit that they experience this deficiency. Both the employers and the external examiners express the same opinion. This is an area where the course has to find a way to improve. Inadequate English proficiency is actually a territory-wide problem among students in Hong Kong. So it is not only this course, but the entire education system that may have to resort to improvement in methods. The use of English and fundamental English grammar should have been learnt in secondary school. How much a student has learnt and to what level of achievement varies with individuals. The phenomenon and the problem now facing Hong Kong is that most secondary school leavers appear not to be up to the needed standard in English proficiency,

despite having passes in English in the Hong Kong Certificate of Education Examination (HKCEE). In tertiary education, the use of English is having to be introduced again in year one of the course. It was found that border line students did get the benefit of the teaching and could improve up to the needed standard. The low achievers really need much more input effort. In year two of the course, the English subject involves the teaching of 'technical and commercial' English such as contract specifications, documents, agreements, and commercial correspondences etc. Though it is recognised that learning this is another approach to learning and improving English proficiency, yet comment is made that this is not a direct approach to brush up the English proficiency of the students. It is suggested there should be English proficiency classes for students to attend on top of their normal curriculum classes. These English proficiency classes should help the low achievers to pass the 'English Proficiency Test' which it is intended should be compulsory before graduation. The certificate for the 'English Proficiency Test' will state the level of achievement, so that the employers will have more understanding of the holder's level of English proficiency. This system could be an impetus to the students encouraging them to greater effort and be a way to improve the English proficiency of tertiary education students.

(iii)   *College Facilities and Supports*

Environment such as accommodation and facilities might promote learning. Air-conditioned, bright, clean and spacious classrooms; well-equipped, spacious and clean laboratories are good accommodations for teaching and learning. A well-serviced and equipped, quiet and spacious library gives a strong support to learning and studying. Student counseling is another service that may be needed by

the students, and the common areas of concern being: career, personal and employment. Recreation programmes might reduce students' stress and study pressure. Purpose built and well furnished sports centre with proper facilities could be strong supports to develop the students. Comment was made that the student counseling office had provided a good service to help the students, though some students might not have been able to get what they requested due to constraints from the college's policy and regulations In the era of information technology, computer facilities are important means of learning and teaching. As identified from the survey, there was the feeling that the computer facilities were inadequate. Any deficiency in this facility has to be improved as soon as possible, otherwise the quality of the vocational course would be affected. The above-mentioned provisions in facilities and supports may promote quality of teaching and learning, which in turn would improve the quality of the course.

(iv)   Quality of Staff and Staff Development

Quality of staff is a part of course quality. The institution stipulates the minimum qualification for academic and administrative staff is to hold a relevant first degree plus working experience. There is no doubt or argument about the capability of a person with these qualifications to teach a sub-degree program at higher diploma level. It is necessary for the academic staff to keep themselves abreast of developments in the industry. They have to keep themselves up to date with advances in knowledge and technology. This development and up-dating may not be obtainable through reading alone. For vocational courses, it has to be seen at work, and learnt through hands-on-experience. To achieve this, staff development in this direction is essential. There are ways to do this, such as doing applied (practical)

research in collaboration with industry; industrial consultancy work; industrial attachment, and participation in the activities of a professional body. Industrial attachment is time consuming and complicated. It may have to be carried out during long school holidays such as summer vacation, term-breaks or, if available, sabbatical leave. Industrial attachment provides the opportunity to up-date the knowledge, as well as receiving the practical experience and training which can be applied to fulfil the required practical training for professional qualifications. Thus the industrial attachment may yield two goods.

The staff, especially young members, can make use of the practical experience gained through such industrial attachment to apply for professional qualifications. Getting professional qualification by this approach is also encouraged by the professional bodies.

Apart from the quality of teaching by staff, the content, scope and methodology of teaching are equally important. The teaching and the course content have to show awareness of the demands and requirements of socio-economic situations, technology, environmental protection, safety, legislation and professional-industrial practice demands and requirements. All these can enhance the employability of the graduates.

The study reveals that the staff involved in the vocational education course are up to the required standard. To keep them up-dated, staff development is necessary and important. The college offering the course has a generous funding, at the average of about HK$15,000 per staff every year, to support staff development. The funding in previous years has been found not to be fully expended, showing that staff are not making full use of the opportunity and the facilities provided. Also, most staff flock to attend conferences, seminars and courses of instruction as the preferred

mode of staff development. Only a few are engaged in industrial consultancy work and participation in the activities of the professional body. There is no record of industrial attachment. A better arrangement between the college and the counter-part in industry has to be sought out, making the industrial attachment more attractive and easier to implement. A pragmatic approach in achieving a fruitful outcome of staff development is demanded.

(v)   *Collaborative Learning*

It is pointed out by Tang (1996) and Drew (1998: 205) that collaborative learning which incorporates cooperation and mutual support is considered by many students as a useful means to improve academic performance (p.205). Collaborative learning can meet the educational needs as well as social needs of the students. It enhances peer relationship and facilitates mutual support, which are much needed in the tertiary vocational learning environment. Tang and Drew suggest that collaborative learning is an area of great potential for development in the tertiary setting in Hong Kong (Drew, 1998 : 225). Project, tutorials and laboratory work assignments are good opportunities for students to develop collaborative learning. The college may offer more formal encouragement and support for students' participation in various forms of cooperative learning. To promote participation in collaborative learning, a student-centred learning approach is needed. Teaching arrangements such as tutorials, student-led seminars, case-study presentations, group projects, team work on practical training/work assignments that emphasizes cooperation and mutual support should be encouraged and could be formally incorporated into the course curriculum.

5.1.4   Conformance to Standards and Requirements

Measuring the standards of the course as well as that of the graduates through the assessment and appraisal of the graduates by their employers is a good indicator. This latter is a realistic and practical measure. However, it is not an authoritative measure and has no bench marking for it. As an internal measure, internal validation at the start of the course has to be conducted. Performance of the course has to be reviewed by re-validation at agreed intervals. This course was validated before its commencement and then revalidated after the course had been operating for three years. The objectives of re-validation are to review, improve and make changes to the course, if necessary. Apart from internal validation and re-validation, the course, if possible, has to be recognised and accredited by a relevant reputable professional body. This accreditation serves as an authoritative measure of the standard. Concerning the performance of the students, this is measured by assessment through examination. As a bench marking for the standard of the examination, the examination papers, as well as the marking of the scripts are moderated by external examiners who are senior practicing engineers and senior academic staff of other tertiary education institutions. A mixture of this combination is to have the external contribution in both practical and academic aspects, thus ensuring that the examination papers are practical as well as up to the required academic standard.

5.2   The Quality Model

Reviewing what has been studied and discussed, the criteria for a quality course can be drawn up to formulate a quality model for a vocational course. The

essence of the model falls into four main categories :- conformance, fitness-for-purpose, quality management and assurance, and teaching and learning.

1. *Conformance*

The course has to conform to the aims and objectives of the course. It also has to conform to the specified standard and requirements.

2. *Fitness-for-purpose*

The admission criteria have to satisfy the authority's or funding agent's policy and instruction in admitting the right students and the right quantity.

Teaching the right things at the right depth and breadth, and making the course appropriate to the background of those admitted in accordance with the admission criteria is then required. The graduates have to meet the needs of the industry and society. They have to be employable.

3. *Quality Management and Assurance*

A quality management policy and system have to be developed and implemented providing the quality assurance of the course. This has to be flexible to cope with the ever changing environment.

Staff need to be competent and possess the required qualifications and experience. They should be provided with appropriate staff development opportunities and be committed to such development There should be provision of all necessary facilities and strong support from college management.

Also required are validation and revalidation through an internal system; accreditation by an external body; maintaining the system of external examiners;

keeping in close liaison with industry, society and relevant authorities through the 'advisory board' arrangement and communicating with and receiving feedback from students, graduates, staff and employers of the graduates.

4.   *Teaching and Learning*

It is necessary to develop a student-centred environment and promote collaborative learning.

Periodic review of the course curriculum and making changes whenever there is need and demand is also required.

Staff need to keep themselves abreast of the development of industry, society and technology. They have to be aware of current relevant legislation, industrial safety and environmental protection processes and requirements. This is to update the content and method of delivery of their teaching ensuring that what is being taught and learnt by the students is appropriate and fit-for-purpose.

5.3   Limitations

There are limitations to the present study. It has been confined to one institution, which in fact is the one and only institution operating such a course in Hong Kong. Although there are other institutions running courses for higher technicians, they are either at different entry requirements or for other disciplines of higher technicians. So it is not possible to compare exactly like with like. It would also have been difficult, though not impossible, to involve students and staff of other institutions in the survey. Cooperation at that level and to that extent is complicated and difficult. Similarly, it is also not possible to engage students of other disciplines,

though within the same college, in the survey. The curricula of courses in other disciplines are different and can not be compared.

Operation of the course has to follow the college's instructions and guidelines. It is not possible to separate the students into experimental and control groups to get a more in-depth study on the effect of pre-entry qualifications, for example. Thus the study was limited to examination performance of the students.

Similarly, the changes in the curriculum are to meet the socio-economic and industrial needs and changes. There is no possibility of trying to change the world and to observe it as it was. The study simply records the changes that have happened and sketches the development of changes with time. Despite this, the study does shed light on the importance of fitness-for-purpose and the relationship of teaching and learning to changes in technology and society.

5.4   Recommendations for Future Research

The present research has attempted to formulate a model that could guide the quality of a vocational education course for higher technicians in Hong Kong. To get the best outcome of the model, a monitoring system is essential. The development of performance indicators could enhance the quality outcome of the vocational course. Currently the vocational course has performance indicators on the academic aspects. It is recommended that the performance indicators be extended to other quality aspects, such as fitness-for-purpose; employability; industry and market demand; staff development; college facilities; teaching and learning, and English and technical proficiencies.

The findings and discussions of the research have generated new interesting questions for further investigation. The rich data obtained for this study,

both quantitative and qualitative, could form a basis for further research in this area.

The present study on the effect of pre-entry qualifications does not draw any definitive conclusion as to whether the effect is due to the added value of Form 7 or to the student calibre resulting from the selection criteria for Form 7. Further quantitative data is required to clarify this question. It is suggested to further investigate this issue by looking into the effects of the subjects to be studied. The subjects of the vocational course can be divided into two categories, viz. analytical and descriptive subjects. It is considered helpful to carry out a study on what and how the subject(s) in the pre-qualification studies affect the performance of those subjects of the vocational education course. Findings from this further study could supplement the conclusions to the present research.

The present study lays the ground work for the preparation of new course curricula meeting the proposed education reform. Among the various issues, the main ones that have to be considered for the new curricula under the new education system are the admission criteria, course duration and the matching with the existing vocational courses. This study indicates that, under the current system, 'Form 7' students are performing better than those straight from Form 5. Could this From 7 study be considered equivalent to and replace the first year of the vocational course? Could the vocational course be revamped to have a duration of only two years to suit the high school graduates from the new system?

The present study has given some information on this. To enhance the quality of the course with respect to practical content, suggestion has been made about a 'practice site' and 'practice project'. It is recommended to review the effectiveness, practicality and efficiency of the system after their implementation. It is also

suggested to review the effectiveness of collaborative learning by further research work.

This study is based on a vocational course in construction discipline. The quality model attempted should apply equally well to vocational courses in other vocational disciplines. It is suggested to investigate the applicability of the model to other vocational courses in Hong Kong.

The present research has made use of both the qualitative and quantitative approaches in the study of the quality of a course. While the quantitative approach provides an objective and scientific study, the qualitative approach has enabled us to understand in more detail about the interviewees' views and opinions. In this research, the interviews were used as a supplementary tool to tap deeper to find and understand more. It is recommended that future research in this area could also use both approaches and take advantage of their respective strengths.

To conclude, a quality model for the courses of a vocational education programme, in close collaboration with the related industry, is feasible and desirable. The research for this study shows that other factors such as management systems and policy needed in support of such a model are also there in principle. And the study has pointed to areas worthy of further investigation and research, as the educational system goes through a time of reform and change, and Hong Kong industry also changes and offers new challenges.

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STUDENT QUESTIONNAIRE (Ver 1)

{Note: Please read the attached guideline before completing the questionnaire.}

A.   Background

1   Have you studied Form 6 ?   [A] Yes   [B] No.

2   Have you studied Form 7 ?   [A] Yes   [B] No.

3   Are you a TI graduate ?   [A] Yes   [B] No.

4   Do you have any practical experience   [A] Yes   [   ] No. of years   [B] No
    in construction before coming to study
    the course ?

5   Do you have any financial hardship ?   A lot   [A]   [B] .   [C]   [D]   None

B.   Ability

6   Your English proficiency is   Very good   [A]   [B]   [C]   [D]   Very poor

7   Your ability to express is   Very good   [A]   [B]   [C]   [D]   Very poor

8   Do you have difficulty in progressing   A lot   [A]   [B]   [C]   None
    with the course ?

C.   Effort

9   Your time spent on homework per   [A]   [B]   [C]   [D]   [E]
    week (Hrs.) is   More than 25   25-20   19-15   14-10   Less than 10

10   Your time spent on year project per   [A]   [B]   [C]   [D]   [E]
    week (Hrs.) is   More than 25   25-20   19-15   14-10   Less than 10

11   Your total time spent on studying the   [A]   [B]   [C]   [D]   [E]
    entire course is   More than 25   25-20   19-15   14-10   Less than 10

D. Comments about the College

12	Sitting places in the library are	Too many		A	B	C	D		Very insufficient
13	Noise level in the library is	Too noisy		A	B	C	D		Very quiet
14	How often do you use library books for your study?	Very often		A	B	C	D		Never
15	Library opening hour is	Too short		A	B	C	D		Too long
16	Service of library staff is	Very helpful		A	B	C	D		Very unhelpful
17	How often do you use library facilities per week ?	Very often		A	B	C	D		Never
18	Do you find the SAU helpful ?	Very helpful		A	B	C	D		Very unhelpful
19	Are you satisfied with the College computing facilities?	Very satisfied		A	B	C	D		Very unsatisfied

20 Please make suggestions which you feel would make the college a better place to study.

_____

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E. IT Teaching

21	Do you support IT Teaching?	Strongly support	A	B	C	D	E	Not support
22	Do you have a computer at home ?			A Yes	B No			
	Would you prefer to obtain the following course materials through internet ?							
23	Course Outline & Teaching Schedule			A Yes	B No			
24	Lecture Notes			A Yes	B No			
25	Tutorial and Laboratory Instruction Sheets			A Yes	B No			
26	How often do you "surf the net" ?	Very often	A	B	C	D		Very seldom

F. General Comments

27	Do you find the course useful to your future career ?	Very useful	A	B	C	D	Very useless
			E No idea				
28	Are you satisfied with the course in general ?	Very satisfied	A	B	C	D	Very disappointed
29	Do you think this type of student questionnaire could improve the quality of the course ?		A	B		C	
			Very helpful	Helpful		Not at all	
			D				
			Wasting time				

30 Other comments : _____

_____

G. Comment on the Course Subjects

How do you rate the subject in the course?

#		Question	Left						Right
1	English &	Difficulty	Very easy	A	B	C	D		Very difficult
2	Communication	Work load	Very light	A	B	C	D		Too much
3	for Construction	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4	(Code 053)	Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology[2]		A	B	C	D	E	
		Others :-							

#	How do you find the lecture notes?	Left						Right
12	● Conciseness	Very poor	A	B	C	D		Excellent
	● Difficulty to understand	Very easy	A	B	C	D		Very difficult
	● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13	What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14	Methodology of tutorial[3] (Tick appropriate boxes)		A	B	C	D	E	
	Others :-							

#		Question	Left					Right
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D	Not at all
17		Does the grade you get in this subject meet your expectation ?		A (Yes)		B (No)		
18		How do you rate the value of the essential reference books ?	Very useful	A	B	C	D	No use at all
				E (No idea)				
19		If you have the choice, would you select the subject ?		A (Yes)		B (No)		

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#		Question	Left	Options	Right
1	Structural	Difficulty	Very easy	[A] [B] [C] [D]	Very difficult
2	Analysis I	Work load	Very light	[A] [B] [C] [D]	Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]	Very boring
4		Support Services provided by the College[1]	Very adequate	[A] [B] [C] [D]	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	[A] [B] [C] [D]	Very poor
6		Teacher's communication skill	Very poor	[A] [B] [C] [D]	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	[A] [B] [C] [D]	Excellent
8		Teacher's explanation towards the subject material	Very poor	[A] [B] [C] [D]	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	[A] [B] [C] [D]	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	[A] [B] [C] [D]	Very unfair
11		Teaching Methodology?		[A] [B] [C] [D] [E]	
		Others :-			

#		How do you find the lecture notes?			
12		● Conciseness	Very poor	A B C D	Excellent
		● Difficulty to understand	Very easy	A B C D	Very difficult
		● Coverage of lecture notes	Very sufficient	A B C D	Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		[A] [B] [C] [D] [E]	
14		Methodology of tutorial[3] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	
		Others :-			
15		Are the tutorials helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
17		Does the grade you get in this subject meet your expectation ?		[A] Yes [B] No	
18		How do you rate the value of the essential reference books ?	Very useful	[A] [B] [C] [D] [E] No idea	No use at all
19		If you have the choice, would you select the subject ?		[A] Yes [B] No	
20		Methodology of laboratory/case study session[4] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	
		Others :-			

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				A	B	C	D	
1	Projects III	Difficulty	Very easy	A	B	C	D	Very difficult
2	(Code 903)	Work load	Very light	A	B	C	D	Too much
3		Your degree of interest in the subject	Very interesting	A	B	C	D	Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	A	B	C	D	Very inadequatte
5		Helpfulness from the Supervisor(s)	Excellent	A	B	C	D	Very poor
6		Supervisor's communication skill	Very poor	A	B	C	D	Excellent
7		Supervisor's enthusiasm in supervision	Very poor	A	B	C	D	Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	A	B	C	D	Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	A	B	C	D	Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	A	B	C	D	Excellent
11		Does the grade you get meet your expectation ?			A Yes	B No		
12		Do you think the project work is helpful to your study of the course ?	Very helpful	A	B	C	D	Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?			A Yes	B No		

Student No. : _____   Student Name : _____

Course : _____   Year : _____

Sex : _____

☺

☺   ☺

End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Student Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please *circle* your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4. (a) (i) Use **the answer sheet marked with 'Version Number'** for questions 1 – 30 in sections A to F.
      (ii) Use separate answer sheet for **each subject**.

   (b) Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied last year.

   (c) Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

   (d) Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

   [1] *Support services include computer facilities, laboratory equipment and other teaching materials.*

   [2] *For Teaching Methodology in Lectures, you may find the following guidelines useful :*
   Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
   Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards. ·
   Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
   Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
   Answer E: Others

   [3] *For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :*
   Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
   Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
   Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] *For methodology of laboratory / case study session, you may find the following guidelines useful :*

Answer A: Laboratory / case study sessions **are fully utilised** to perform experiments / case study.

Answer B: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You have to mark the "year" column and ignore the "class/group" and "paper ID" of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

6. ***Thank you for your co-operation and help to complete the questionnaire.***

STUDENT QUESTIONNAIRE (Ver 2)

{Note: Please read the attached guideline before completing the questionnaire.}

A.   Background

1   Have you studied Form 6 ?　　　　　　　[A] No　　[B] Yes

2   Have you studied Form 7 ?　　　　　　　[A] No　　[B] Yes

3   Are you a TI graduate ?　　　　　　　　[A] No　　[B] Yes

4   Do you have any practical experience　　[A] No　　[＿＿＿] No. of years　　[B] Yes
    in construction before coming to study
    the course ?

5   Do you have any financial hardship ?　None [A]　[B]　[C]　[D]　A lot

B.   Ability

6   Your English proficiency is　Very poor [A]　[B]　[C]　[D]　Very good

7   Your ability to express is　Very poor [A]　[B]　[C]　[D]　Very good

8   Do you have difficulty in progressing　None [A]　[B]　[C]　　　A lot
    with the course ?

C.   Effort

9   Your time spent on homework per　　　[A]　　[B]　　[C]　　[D]　　[E]
    week (Hrs.) is　　　　　　　　　Less than 10　10-14　15-19　20-25　More than 25

10 Your time spent on year project per　　[A]　　[B]　　[C]　　[D]　　[E]
    week (Hrs.) is　　　　　　　　　Less than 10　10-14　15-19　20-25　More than 25

11 Your total time spent on studying the　[A]　　[B]　　[C]　　[D]　　[E]
    entire course is　　　　　　　　Less than 10　10-14　15-19　20-25　More than 25

D. Comments about the College

12	Sitting places in the library are	Very insufficient	A	B	C	D	Too many
13	Noise level in the library is	Very quiet	A	B	C	D	Too noisy
14	How often do you use library books for your study?	Never	A	B	C	D	Very often
15	Library opening hour is	Too long	A	B	C	D	Too short
16	Service of library staff is	Very unhelpful	A	B	C	D	Very helpful
17	How often do you use library facilities per week ?	Never	A	B	C	D	Very often
18	Do you find the SAU helpful ?	Unhelpful	A	B	C	D	Very helpful
19	Are you satisfied with the College computing facilities?	Very unsatisfied	A	B	C	D	Very satisfied

20 Please make suggestions which you feel would make the college a better place to study.

_____

_____

E. IT Teaching

21	Do you support IT Teaching?	Not support	A	B	C	D	E		Strongly support
22	Do you have a computer at home ?		A Yes		B No				
	Would you prefer to obtain the following course materials through internet ?								
23	Course Outline & Teaching Schedule		A No		B Yes				
24	Lecture Notes		A No		B Yes				
25	Tutorial and Laboratory Instruction Sheets		A No		B Yes				
26	How often do you "surf the net" ?	Very seldom	A	B	C	D			Very often

F. General Comments

27	Do you find the course useful to your future career ?		A — No idea					
		Very useful	B	C	D	E		Very useless
28	Are you satisfied with the course in general ?	Very disappointed	A	B	C	D		Very satisfied
29	Do you think this type of student questionnaire could improve the quality of the course ?		A — Very helpful	B — Helpful	C — Not at all			
			D — Wasting time					
30	Other comments : _____							

_____

G. Comment on the Course Subjects

How do you rate the subject in the course?

#	Subject	Question	Left	A	B	C	D	E	Right
1	English &	Difficulty	Very easy	A	B	C	D		Very difficult
2	Communication	Work load	Very light	A	B	C	D		Too much
3	for Construction	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4	(Code 053)	Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology[2]		A	B	C	D	E	
		Others :-							

How do you find the lecture notes?

#	Question	Left	A	B	C	D	E	Right
12	● Conciseness	Very poor	A	B	C	D		Excellent
	● Difficulty to understand	Very easy	A	B	C	D		Very difficult
	● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13	What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14	Methodology of tutorial[3] (Tick appropriate boxes)		A	B	C	D	E	
	Others :-							
15	Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
16	Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
17	Does the grade you get in this subject meet your expectation ?		A (Yes)	B (No)				
18	How do you rate the value of the essential reference books ?	Very useful	A	B	C	D	E (No idea)	No use at all
19	If you have the choice, would you select the subject ?		A (Yes)	B (No)				

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#		Question	Left	Options	Right
1	**Structural**	Difficulty	Very easy	[A] [B] [C] [D]	Very difficult
2	**Analysis I**	Work load	Very light	[A] [B] [C] [D]	Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]	Very boring
4		Support Services provided by the College[1]	Very adequate	[A] [B] [C] [D]	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	[A] [B] [C] [D]	Very poor
6		Teacher's communication skill	Very poor	[A] [B] [C] [D]	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	[A] [B] [C] [D]	Excellent
8		Teacher's explanation towards the subject material	Very poor	[A] [B] [C] [D]	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	[A] [B] [C] [D]	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	[A] [B] [C] [D]	Very unfair
11		Teaching Methodology[2]		[A] [B] [C] [D] [E]	

Others :-

#		Question	Left	Options	Right
12		How do you find the lecture notes? ● Conciseness ● Difficulty to understand ● Coverage of lecture notes	Very poor / Very easy / Very sufficient	[A] [B] [C] [D]	Excellent / Very difficult / Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		[A] [B] [C] [D] [E]	
14		Methodology of tutorial[3] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	

Others :-

#		Question	Left	Options	Right
15		Are the tutorials helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
17		Does the grade you get in this subject meet your expectation ?		[A] Yes [B] No	
18		How do you rate the value of the essential reference books ?	Very useful	[A] [B] [C] [D] [E] No idea	No use at all
19		If you have the choice, would you select the subject ?		[A] Yes [B] No	
20		Methodology of laboratory/case study session[4] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	

Others :-

1	*Projects III*	Difficulty	Very easy	A B C D	Very difficult
2	(Code 903)	Work load	Very light	A B C D	Too much
3		Your degree of interest in the subject	Very interesting	A B C D	Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	A B C D	Very inadequate
5		Helpfulness from the Supervisor(s)	Excellent	A B C D	Very poor
6		Supervisor's communication skill	Very poor	A B C D	Excellent
7		Supervisor's enthusiasm in supervision	Very poor	A B C D	Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	A B C D	Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	A B C D	Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	A B C D	Excellent
11		Does the grade you get meet your expectation ?		A B Yes No	
12		Do you think the project work is helpful to your study of the course ?	Very helpful	A B C D	Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?		A B Yes No	

Student No. : _____   Student Name : _____

Course : _____   Year : _____

Sex : _____

End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Student Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please _circle_ your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4. (a) (ii) Use **the answer sheet marked with 'Version Number'** for questions 1 – 30 in sections A to F.
   (ii) Use separate answer sheet for **each subject**.

   (b) Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied last year.

   (c) Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

   (d) Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

   [1] _Support services include computer facilities, laboratory equipment and other teaching materials._

   4 For Teaching Methodology in Lectures, you may find the following guidelines useful :
   Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
   Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards.
   Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
   Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
   Answer E: Others

   5 For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :
   Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
   Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
   Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] *For methodology of laboratory / case study session, you may find the following guidelines useful :*

Answer A: Laboratory / case study sessions <u>are fully utilised</u> to perform experiments / case study.

Answer B: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You have to mark the "year" column and ignore the "class/group" and "paper ID" of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

6. *Thank you for your co-operation and help to complete the questionnaire.*

GRADUATE QUESTIONNAIRE (Ver 1)

{Note: **1.** *Please read the attached guideline before completing the questionnaire.}*

A. GRADUATE BACKGROUND

Year of graduation : _____

B. IF YOU ARE EMPLOYED

1. Nature of the company :

A		B		C		D
Government		Consultant		Contractor		Material Supplier / Testing

E
Others *(Please specify)* _____

2. Position in company/office

A		B		C		D
Assistant Engineer / Engineer		Site Supervisor / Engineer		Quantity / Site Surveyor		Technical Officer

E
Others *(Please specify)* _____

3. **Basic Monthly Salary**

A	B	C	D	E
Above $14,000	$14,000 to $12,001	$12,000 to $10,001	$10,000 to $8,000	Below $8,000

4. **You get or expect to have promotion after working for :**

A	B	C	D	E
Above 4 yrs	4 - 3 yrs	3 - 2 yrs	2 - 1 yr	No promotion

5. **Are you attending/preparing to attend a further study programme ?**

A	B
Yes	No

6. **How long have you been working in this company/office ?** ☐ months

7. **Your satisfaction with the employment/work**

Very satisfied ☐ A ☐ B ☐ C ☐ D Very disappointed

C. IF YOU ARE UNEMPLOYED

8. **Indicate your current status :**

A	B
Unemployed but attending a course	Unemployed

3. **Basic Monthly Salary**

A	B	C	D	E
Above $14,000	$14,000 to $12,001	$12,000 to $10,001	$10,000 to $8,000	Below $8,000

4. **You get or expect to have promotion after working for :**

A	B	C	D	E
Above 4 yrs	4 - 3 yrs	3 - 2 yrs	2 - 1 yr	No promotion

5. **Are you attending/preparing to attend a further study programme ?**

A	B
Yes	No

6. **How long have you been working in this company/office ?**

☐ months

7. **Your satisfaction with the employment/work**

Very satisfied ☐ A ☐ B ☐ C ☐ D Very disappointed

C. IF YOU ARE UNEMPLOYED

8. **Indicate your current status :**

A	B
Unemployed but attending a course	Unemployed

D. COMMENT ON THE COURSE

9.	Usefulness of the Course to your employment	Not useful	A	B	C		Very useful
10.	Usefulness of the Course to your further study	Not useful	A	B	C		Very useful
11.	Satisfaction with the Course in general	Very satisfied	A	B	C	D	Very disappointed
12.	Engineering Concept of the Course	Very inadequate	A	B	C	D	Very adequate
13.	Practical Applications	Very inadequate	A	B	C	D	Very adequate
14.	Industrial Training	Very adequate	A	B	C	D	Very inadequate
15.	Environmental Concerns	Very inadequate	A	B	C	D	Very adequate
16.	Safety Issues	Very inadequate	A	B	C	D	Very adequate

II) Technical Proficiency

17.	Analysis aspects	Very adequate	A	B	C	D	Very inadequate
18.	Design aspects	Very adequate	A	B	C	D	Very inadequate
19.	Construction aspects	Very adequate	A	B	C	D	Very inadequate

III) Drafting Skills

20.	CAD Skills	Very adequate	A	B	C	D	Very inadequate
21.	Manual Drawing Skills	Very adequate	A	B	C	D	Very inadequate

IV) Computer Skills

22.	Proficiency in using personal computers	Very inadequate	A	B	C	D	Very adequate
23.	Proficiency in using general purpose softwares	Very inadequate	A	B	C	D	Very adequate
24.	Proficiency in using engineering/technical softwares	Very inadequate	A	B	C	D	Very adequate

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V) Language Skills

25.	Oral English skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
26.	Written English skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
27.	Written Chinese skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
28.	Putonghua skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

VI) Personal Attributes

29.	Problem solving skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
30.	Cooperation with others	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
31.	Sense of responsibility	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
32.	Communication skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
33.	Initiative	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
34.	Creativity	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

35. Other comments :

[A]　　　　　　[B]
Comments　　　No Comment

Comments : *(Use supplementary sheets if necessary)* _____

_____

_____

_____

E. FURTHER STUDY *(To be answered by further studying graduates only)*

36. Please indicate the institution that offers you the course is a

[A]　　　　　　　　[B]　　　　　　　　[C]
Local university　　Overseas university　　Other educational
　　　　　　　　　　　　　　　　　　　institution

Name of the Institution _____ *(please specify)*

37. The course of study is a

A	B	C	D
Higher Degree programme	Degree programme	Sub-degree programme	Professional development programme

E

Others *(please specify)* _____

Name of the Course _____ *(please specify)*

Now studying in _____ **year / level** *(please specify)*

38. Why do you go for further study ?

A	B	C	D
To become a professional engineer	To learn more	For self-interest	No employment

E

Others *(Please specify)* _____

Helpfulness of the Higher Diploma course to your further study

39. Does the working experience help your current further study ?

Not at all   A   B   C   D   Very helpful   E
                                                No working experience

40. To what extent the content of your current further study had been covered in your higher diploma course ?

A	B	C	D	E
Above 45%	45 - 30%	30 - 15%	15 - 0%	0%

41. Do you find the current course of further study difficult or easy ?

Very difficult   A   B   C   D   Very easy

Teaching Methodology

42. Compare the teaching methodology of the current course of further study with that of the higher diploma course. It is found,

Even worse   ☐ A   ☐ B   ☐ C   ☐ D   Much better

43. Any other comments :

☐ A   ☐ B
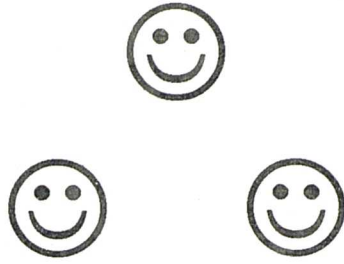Comment   No comment

Details of comment : _____

_____

_____

F. <u>Comment on the Course Subjects</u>

How do you rate the subject in the course?

#	Subject	Item	Left	Options	Right
1	*English &*	Difficulty	Very easy	[A] [B] [C] [D]	Very difficult
2	*Communication*	Work load	Very light	[A] [B] [C] [D]	Too much
3	*for Construction*	Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]	Very boring
4	*(Code 053)*	Support Services provided by the College[1]	Very adequate	[A] [B] [C] [D]	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	[A] [B] [C] [D]	Very poor
6		Teacher's communication skill	Very poor	[A] [B] [C] [D]	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	[A] [B] [C] [D]	Excellent
8		Teacher's explanation towards the subject material	Very poor	[A] [B] [C] [D]	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	[A] [B] [C] [D]	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	[A] [B] [C] [D]	Very unfair
11		Teaching Methodology[2]		[A] [B] [C] [D] [E]	

Others :-

#		Item	Left	Options	Right
12		How do you find the lecture notes?			
		● Conciseness	Very poor	[A] [B] [C] [D]	Excellent
		● Difficulty to understand	Very easy	[A] [B] [C] [D]	Very difficult
		● Coverage of lecture notes	Very sufficient	[A] [B] [C] [D]	Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers e.g. Power Point (D) Others (E) None		[A] [B] [C] [D] [E]	
14		Methodology of tutorial[3] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	

Others :-

#		Item	Left	Options	Right
15		Are the tutorials helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
17		Does the grade you get in this subject meet your expectation ?		[A] Yes [B] No	
18		How do you rate the value of the essential reference books ?	Very useful	[A] [B] [C] [D] [E] No idea	No use at all
19		If you have the choice, would you select the subject ?		[A] Yes [B] No	

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#		Question	Left	A	B	C	D	E	Right
1	Structural	Difficulty	Very easy	A	B	C	D		Very difficult
2	Analysis I	Work load	Very light	A	B	C	D		Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4		Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology?		A	B	C	D	E	

Others :-

#		Question	Left	A	B	C	D	E	Right
12		How do you find the lecture notes?							
		● Conciseness	Very poor	A	B	C	D		Excellent
		● Difficulty to understand	Very easy	A	B	C	D		Very difficult
		● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14		Methodology of tutorial[3] (Tick appropriate boxes)		A	B	C	D	E	

Others :-

#		Question	Left	A	B	C	D	E	Right
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
17		Does the grade you get in this subject meet your expectation ?		A (Yes)	B (No)				
18		How do you rate the value of the essential reference books ?	Very useful	A	B	C	D	E (No idea)	No use at all
19		If you have the choice, would you select the subject ?		A (Yes)	B (No)				
20		Methodology of laboratory/case study session[4] (Tick appropriate boxes)		A	B	C	D	E	

Others :-

#		Question	Left	A	B	C	D	Right
1	*Projects III*	Difficulty	Very easy	A	B	C	D	Very difficult
2	(Code 903)	Work load	Very light	A	B	C	D	Too much
3		Your degree of interest in the subject	Very interesting	A	B	C	D	Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	A	B	C	D	Very inadequatte
5		Helpfulness from the Supervisor(s)	Excellent	A	B	C	D	Very poor
6		Supervisor's communication skill	Very poor	A	B	C	D	Excellent
7		Supervisor's enthusiasm in supervision	Very poor	A	B	C	D	Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	A	B	C	D	Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	A	B	C	D	Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	A	B	C	D	Excellent
11		Does the grade you get meet your expectation ?		A Yes	B No			
12		Do you think the project work is helpful to your study of the course ?	Very helpful	A	B	C	D	Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?		A Yes	B No			

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:) :)

:) :)

End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Graduate Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please *circle* your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4. (a) (i) Use **the answer sheet marked with 'Version Number'** for questions
       1 – 43 in sections B to E.
   (ii) Use separate answer sheet for **each subject**.

   (b) Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied in the final year of the course.

   (c) Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

   (d) Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

   [1] *Support services include computer facilities, laboratory equipment and other teaching materials.*

   [2] *For Teaching Methodology in Lectures, you may find the following guidelines useful :*
   Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
   Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards.
   Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
   Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
   Answer E: Others

   [3] *For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :*
   Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
   Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
   Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] *For methodology of laboratory / case study session, you may find the following guidelines useful :*

Answer A: Laboratory / case study sessions <u>are fully utilised</u> to perform experiments / case study.

Answer B: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You can ignore the "year", "class/group" and "paper ID" columns of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

5. Please return the completed questionnaire and answer sheets using the enclosed stamped and self-addressed envelope.

6. *Thank you for your co-operation and help to complete the questionnaire.*

GRADUATE QUESTIONNAIRE (Ver 2)

{Note: 1. *Please read the attached guideline before completing the questionnaire.}*

A. GRADUATE BACKGROUND

Year of graduation : _____

B. IF YOU ARE EMPLOYED

1. Nature of the company :

A	B	C	D
Government	Consultant	Contractor	Material Supplier / Testing

E
Others *(Please specify)* _____

2. Position in company/office

A	B	C	D
Assistant Engineer / Engineer	Site Supervisor / Engineer	Quantity / Site Surveyor	Technical Officer

E
Others *(Please specify)* _____

3. Basic Monthly Salary

A	B	C	D	E
Above $14,000	$14,000 to $12,001	$12,000 to $10,001	$10,000 to $8,000	Below $8,000

4. **You get or expect to have promotion after working for :**

A	B	C	D	E
Above 4 yrs	4 - 3 yrs	3 - 2 yrs	2 - 1 yr	No promotion

5. **Are you attending/preparing to attend a further study programme?**

B	A
Yes	No

6. **How long have you been working in this company/office ?**

months

7. **Your satisfaction with the employment/work**

Very disappointed [A] [B] [C] [D] Very satisfied

C. IF YOU ARE UNEMPLOYED

8. **Indicate your current status :**

A	B
Unemployed but attending a course	Unemployed

D. COMMENT ON THE COURSE

9.	Usefulness of the Course to your employment	Very useful	[A]	[B]	[C]		Not useful
10.	Usefulness of the Course to your further study	Very useful	[A]	[B]	[C]		Not useful
11.	Satisfaction with the Course in general	Very disappointed	[A]	[B]	[C]	[D]	Very satisfied
12.	Engineering Concept of the Course	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
13.	Practical Applications	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
14.	Industrial Training	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
15.	Environmental Concerns	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
16.	Safety Issues	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

II) Technical Proficiency

17.	Analysis aspects	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
18.	Design aspects	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
19.	Construction aspects	Very adequate	[A]	[B]	[C]	[D]	Very inadequate

III) Drafting Skills

20.	CAD Skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
21.	Manual Drawing Skills	Very adequate	[A]	[B]	[C]	[D]	Very inadequate

IV) Computer Skills (taught by the course, not through self-learning)

22.	Proficiency in using personal computers	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
23.	Proficiency in using general purpose softwares	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
24.	Proficiency in using engineering/technical softwares	Very adequate	[A]	[B]	[C]	[D]	Very inadequate

V) Language Skills   *(taught by the course, not through self-learning)*

25.	Oral English skills	Very adequate	A	B	C	D	Very inadequate
26.	Written English skills	Very adequate	A	B	C	D	Very inadequate
27.	Written Chinese skills	Very inadequate	A	B	C	D	Very adequate
28.	Putonghua skills	Very inadequate	A	B	C	D	Very adequate

VI) Personal Attributes   *(learned from the course)*

29.	Problem solving skills	Very adequate	A	B	C	D	Very inadequate
30.	Cooperation with others	Very adequate	A	B	C	D	Very inadequate
31.	Sense of responsibility	Very inadequate	A	B	C	D	Very adequate
32.	Communication skills	Very adequate	A	B	C	D	Very inadequate
33.	Initiative	Very inadequate	A	B	C	D	Very adequate
34.	Creativity	Very inadequate	A	B	C	D	Very adequate

35.   **Other comments :**

    A   B
Comments   No Comment

Comments :   *(Use supplementary sheets if necessary)*   _____

_____

_____

_____

E.   FURTHER STUDY   *(To be answered by further studying graduates only)*

36.   **Please indicate the institution that offers you the course is a**

    A   B   C
Local university   Overseas university   Other educational
                                                     institution

Name of the Institution   _____   *(please specify)*

37. The course of study is a

A		B		C		D
Higher Degree programme		Degree programme		Sub-degree programme		Professional development programme

E
Others *(please specify)*

Others *(please specify)* _____

Name of the Course _____ *(please specify)*

Now studying in _____ year / level *(please specify)*

38. Why do you go for further study ?

A		B		C		D
To become a professional engineer		To learn more		For self-interest		No employment

E
Others *(Please specify)*

Others *(Please specify)* _____

Helpfulness of the Higher Diploma course to your further study

39. Does the working experience help your current further study ?

Very helpful   A   B   C   D   Not at all   E

No working experience

40. To what extent the content of your current further study had been covered in your higher diploma course ?

A	B	C	D	E
Above 45%	45 - 30%	30 - 15%	15 - 0%	0%

41. Do you find the current course of further study difficult or easy ?

Very easy   A   B   C   D   Very difficult

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Teaching Methodology

42. **Compare the teaching methodology of the current course of further study with that of the higher diploma course. It is found,**

Much better | A | | B | | C | | D | Even worse

43. **Any other comments :**

| B |
Comment

| A |
No comment

Details of comment : _____

_____

_____

F. Comment on the Course Subjects

How do you rate the subject in the course?

1	**English &**	Difficulty	Very easy	A B C D	Very difficult
2	**Communication**	Work load	Very light	A B C D	Too much
3	**for Construction**	Your degree of interest in the subject	Very interesting	A B C D	Very boring
4	(Code 053)	Support Services provided by the College[1]	Very adequate	A B C D	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A B C D	Very poor
6		Teacher's communication skill	Very poor	A B C D	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A B C D	Excellent
8		Teacher's explanation towards the subject material	Very poor	A B C D	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A B C D	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A B C D	Very unfair
11		Teaching Methodology[2]		A B C D E	
		Others :-			
12		How do you find the lecture notes? ● Conciseness ● Difficulty to understand ● Coverage of lecture notes	Very poor Very easy Very sufficient	A B C D A B C D A B C D	Excellent Very difficult Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A B C D E	
14		Methodology of tutorial[3] (Tick appropriate boxes)		A B C D E	
		Others :-			
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A B C D	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A B C D	Not at all
17		Does the grade you get in this subject meet your expectation ?		A Yes B No	
18		How do you rate the value of the essential reference books ?	Very useful	A B C D E No idea	No use at all
19		If you have the choice, would you select the subject ?		A Yes B No	

#			Left	A	B	C	D	E	Right
1	*Structural*	Difficulty	Very easy	A	B	C	D		Very difficult
2	*Analysis I*	Work load	Very light	A	B	C	D		Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4		Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology[2]		A	B	C	D	E	
		Others :-							
12		How do you find the lecture notes?							
		● Conciseness	Very poor	A	B	C	D		Excellent
		● Difficulty to understand	Very easy	A	B	C	D		Very difficult
		● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13		What are the teaching aids used in the lecture ?							
		(A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14		Methodology of tutorial[3] *(Tick appropriate boxes)*		A	B	C	D	E	
		Others :-							
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
17		Does the grade you get in this subject meet your expectation ?		A Yes	B No				
18		How do you rate the value of the essential reference books ?	Very useful	A	B	C	D	E No idea	No use at all
19		If you have the choice, would you select the subject ?		A Yes	B No				
20		Methodology of laboratory/case study session[4] *(Tick appropriate boxes)*		A	B	C	D	E	
		Others :-							

#						
1	*Projects III*	Difficulty	Very easy	[A] [B] [C] [D]		Very difficult
2	(Code 903)	Work load	Very light	[A] [B] [C] [D]		Too much
3		Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]		Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	[A] [B] [C] [D]		Very inadequatte
5		Helpfulness from the Supervisor(s)	Excellent	[A] [B] [C] [D]		Very poor
6		Supervisor's communication skill	Very poor	[A] [B] [C] [D]		Excellent
7		Supervisor's enthusiasm in supervision	Very poor	[A] [B] [C] [D]		Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	[A] [B] [C] [D]		Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	[A] [B] [C] [D]		Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	[A] [B] [C] [D]		Excellent
11		Does the grade you get meet your expectation ?		[A] [B] Yes No		
12		Do you think the project work is helpful to your study of the course ?	Very helpful	[A] [B] [C] [D]		Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?		[A] [B] Yes No		

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End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Graduate Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please _circle_ your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4.   (a)   (ii)   Use **the answer sheet marked with 'Version Number'** for questions 1 – 43 in sections B to E.
         (ii)   Use separate answer sheet for **each subject**.

     (b)   Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied in the final year of the course.

     (c)   Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

     (d)   Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

         [1] _Support services include computer facilities, laboratory equipment and other teaching materials._

         4   _For Teaching Methodology in Lectures, you may find the following guidelines useful :_
         Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
         Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards.
         Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
         Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
         Answer E: Others

         5   _For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :_
         Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
         Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
         Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] *For methodology of laboratory / case study session, you may find the following guidelines useful :*

Answer A: Laboratory / case study sessions **are fully utilised** to perform experiments / case study.

Answer B: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You can ignore the "year", "class/group" and "paper ID" columns of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

5. Please return the completed questionnaire and answer sheets using the enclosed stamped and self-addressed envelope.

6. *Thank you for your co-operation and help to complete the questionnaire.*

EMPLOYER QUESTIONNAIRE (Ver 1)

{Note: **1.** *You may omit any of the following items that you would not like to disclose.*
2. *Please* **CIRCLE** *your answers in the questionnaire.}*

1. **Nature of the company :**

A		B		C		D
Government		Consultant		Contractor		Material Supplier / Testing

E
Others *(Please specify)* _____

2. **Total number of graduates from the Hong Kong Technical College (Tsing Yi) with an award of Higher Diploma in Civil / Structural Engineering employed in your company / office :**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

3. **Number of our graduates involved in Site Supervision**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

4. **Number of our graduates involved in Design / Drafting**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

5. **Number of our graduates involved in Land/Engineering Surveying**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

6. **Number of our graduates involved in Quantity Surveying**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

7. **Number of our graduates involved in Material Supplies/Testing**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

8. **Number of our graduates involved in duties that are not related to items 3 to 7 above**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

9. **Give the number of Higher Diploma graduates employed by you has resigned after working :**

A	B	C	D	E
None resigned	Over 2 yrs	2 - 1 yr	1 - 1/2 yr	Less than 1/2 yr

The Higher Diploma graduates employed by you, who are studying a degree programme, are :-

10. **Sponsored by your firm**

A	B
Yes	No

11. **Studying in**

A	B	C	D
Full-time	Part-time	Overseas	None

12. **In your opinion, are there sufficient Higher Diploma graduates meeting the market demand at the present time in the construction industry ?**

A	B	C	D
Not enough	About right	Too many	No idea

Comments on the Technical Proficiency of our Graduate(s) under your employment

		Very adequate	Adequate	Inadequate	Very Inadequate	Cannot comment
	Engineering Knowledge :					
13.	Basic Concepts	A	B	C	D	E
14.	in Construction	A	B	C	D	E
15.	in Analysis	A	B	C	D	E
16.	in Design	A	B	C	D	E
17.	Practical Applications	A	B	C	D	E
18.	Environmental Concerns	A	B	C	D	E
19.	Safety Issues	A	B	C	D	E
	Drafting Skill :					
20.	Computer-aided Drawing	A	B	C	D	E
21.	Manual Drawing	A	B	C	D	E
	Computer Skill :					
22.	Use of personal computer	A	B	C	D	E
23.	General purpose software	A	B	C	D	E
24.	Engineering software	A	B	C	D	E

		Very poor	Poor	Good	Excellent
	Language Skill :				
25.	Oral English	A	B	C	D
26.	Written English	A	B	C	D
27.	Putonghua	A	B	C	D
28.	Cantonese	A	B	C	D

Comments on our Graduates' Personal Attributes

		Excellent	Good	Poor	Very poor	Cannot comment
29.	Problem solving skill	A	B	C	D	E
30.	Cooperation	A	B	C	D	E
31.	Sense of responsibility	A	B	C	D	E
32.	Ability to express	A	B	C	D	E
33.	Initiative	A	B	C	D	E
34.	Creativity	A	B	C	D	E

35. Which topic(s) would you like us to emphasize/introduce to or delete from the course in future ?

A   B
Comments   No Comment

Details of comment : _____

_____

36. In general, do you feel that our Higher Diploma graduate(s) employed by your company have sufficient knowledge/training to perform the duties in your office ?

A   B
Yes   No

From the performance of the employees, you find :

37.	the subjects taught in the Higher Diploma course are	Very useful	A	B	C	D	Not useful
38.	the Course in general is	Excellent	A	B	C	D	Very poor

39. Apart from civil and structural engineering, what other new course(s) is required to meet your need ?

Please specify : _____

_____

40. Has your company/office got certification of ISO-9000 ?

A   B
Yes   No

Comment on Certification of ISO-9000

			A	B	C	D	
41.	Cost of operation is	Greatly increased	A	B	C	D	Greatly reduced
42.	Operation efficiency is	Greatly improved	A	B	C	D	Greatly reduced
43.	Quality of output/product is	Even worse	A	B	C	D	Greatly improved
44.	Response from staff is	Poorly received	A	B	C	D	Well received
45.	Profit/productivity is	Greatly increased	A	B	C	D	Greatly reduced
46.	The system is beneficial to the company/staff in long-term	Very much	A	B	C	D	Not at all

47. Any other comments :

       A   B

     Comment   No comment

Details of comment : _____

_____

_____

End of Questionnaire

Thank you for your co-operation

EMPLOYER QUESTIONNAIRE (Ver 2)

{Note : **1.** *You may omit any of the following items that you would not like to disclose.*

2. *Please* <u>*CIRCLE*</u> *your answers in the questionnaire.}*

1. **Nature of the company :**

   | A | | B | | C | | D |
   Government   Consultant   Contractor   Material Supplier / Testing

   | E |
   Others *(Please specify)* _____

2. **Total number of graduates from the** <u>**Hong Kong Technical College (Tsing Yi)**</u> **with an award of** <u>**Higher Diploma in Civil / Structural Engineering**</u> **employed in your company / office :**

   | A | | B | | C | | D | | E |
   Above 6   6 - 5   4 - 3   2 - 1   None

3. **Number of our graduates involved in** <u>**Site Supervision**</u>

   | A | | B | | C | | D | | E |
   Above 6   6 - 5   4 - 3   2 - 1   None

4. **Number of our graduates involved in** <u>**Design / Drafting**</u>

   | A | | B | | C | | D | | E |
   Above 6   6 - 5   4 - 3   2 - 1   None

5. **Number of our graduates involved in** <u>**Land/Engineering Surveying**</u>

   | A | | B | | C | | D | | E |
   Above 6   6 - 5   4 - 3   2 - 1   None

6. **Number of our graduates involved in <u>Quantity Surveying</u>**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

7. **Number of our graduates involved in <u>Material Supplies/Testing</u>**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

8. **Number of our graduates involved in <u>duties that are not related to items 3 to 7 above</u>**

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

9. **Give the number of Higher Diploma graduates employed by you has resigned after working :**

A	B	C	D	E
None resigned	Over 2 yrs	2 - 1 yr	1 - 1/2 yr	Less than 1/2 yr

The Higher Diploma graduates employed by you, who are studying a degree programme, are :-

10. **Sponsored by your firm**

A	B
Yes	No

11. **Studying**

A	B	C	D
Full-time	Part-time	Overseas	None

12. **In your opinion, are there sufficient Higher Diploma graduates meeting the market demand at the present time in the construction industry ?**

A	B	C	D
Not enough	About right	Too many	No idea

Comments on the Technical Proficiency of our Graduate(s) under your employment

		Cannot comment	Very adequate	Adequate	Inadequate	Very inadequate
	Engineering Knowledge :					
13.	Basic Concepts	A	B	C	D	E
14.	in Construction	A	B	C	D	E
15.	in Analysis	A	B	C	D	E
16.	in Design	A	B	C	D	E
17.	Practical Applications	A	B	C	D	E
18.	Environmental Concerns	A	B	C	D	E
19.	Safety Issues	A	B	C	D	E
	Drafting Skill :					
20.	Computer-aided Drawing	A	B	C	D	E
21.	Manual Drawing	A	B	C	D	E
	Computer Skill :					
22.	Use of personal computer	A	B	C	D	E
23.	General purpose software	A	B	C	D	E
24.	Engineering software	A	B	C	D	E

		Excellent	Good	Poor	Very poor
	Language Skill :				
25.	Oral English	A	B	C	D
26.	Written English	A	B	C	D
27.	Putonghua	A	B	C	D
28.	Cantonese	A	B	C	D

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Comments on our Graduates' Personal Attributes

		Cannot comment	Excellent	Good	Poor	Very poor
29.	Problem solving skill	A	B	C	D	E
30.	Cooperation	A	B	C	D	E
31.	Sense of responsibility	A	B	C	D	E
32.	Ability to express	A	B	C	D	E
33.	Initiative	A	B	C	D	E
34.	Creativity	A	B	C	D	E

35. **Which topic(s) would you like us to emphasize/introduce to or delete from the course in future ?**

    A   B

    Comments   No Comment

Details of comment : _____

_____

36. **In general, do you feel that our Higher Diploma graduate(s) employed by your company have sufficient knowledge/training to perform the duties in your office ?**

    A   B

    Yes   No

From the performance of the employees, you find :

37.	the subjects taught in the Higher Diploma course are	Not useful	A	B	C	D	Very useful
38.	the Course in general is	Very poor	A	B	C	D	Excellent

39. **Apart from civil and structural engineering, what other new course(s) is required to meet your need ?**

    Please specify : _____

_____

40. **Has your company/office got certification of ISO-9000 ?**

    A   B

    Yes   No

Comment on Certification of ISO-9000

			A	B	C	D	
41.	Cost of operation is	Greatly reduced	A	B	C	D	Greatly increased
42.	Operation efficiency is	Greatly reduced	A	B	C	D	Greatly improved
43.	Quality of output/product is	Greatly improved	A	B	C	D	Even worse
44.	Response from staff is	Well received	A	B	C	D	Poorly received
45.	Profit/productivity is	Greatly reduced	A	B	C	D	Greatly increased
46.	The system is beneficial to the company/staff in long-term	Not at all	A	B	C	D	Very much

47. Any other comments :

A
Comment

B
No comment

Details of comment : _____

_____

_____

End of Questionnaire

Thank you for your co-operation

ACADEMIC STAFF QUESTIONNAIRE (Ver 1)

{Note: *1.*   *Your answer is purely your personal view/opinion base on your teaching experience and is kept in*
           strict confidence.
        2.   *Please CIRCLE your answers in the questionnaire.}*

(A)   Comment on the subject(s) taught :
(Use separate sheet for each subject)

(i)   Subject title : _____   **(FT) (Yr. 1 / 2 / 3)***

		Left	A	B	C	D	Right
1	Relevancy of the subject to the course	Very relevant	A	B	C	D	Very irrelevant
2	Relevancy of the subject syllabus to the construction industry and the profession	Very relevant	A	B	C	D	Very irrelevant
3	Difficulty of this subject to the students	Very easy	A	B	C	D	Very difficult
4	Learning attitude of students in the subject	Very poor	A	B	C	D	Very good
5	Consistency of student performance in the subject	Very consistent	A	B	C	D	Very inconsistent
6	Contact hours of lecture classes of the subject	Too long	A	B	C	D	Insufficient
7	Contact hours of tutorial classes of the subject	Insufficient	A	B	C	D	Too long
8	Contact hours of laboratory/ practical classes of the subject	Too long	A	B	C	D	Insufficient
9	Usefulness of tutorial classes	Very useful	A	B	C	D	Very unhelpful

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10	Coordination among subject lecturers teaching the same subject	Too much	[A] [B] [C] [D]			Very insufficient
11	Are you confident in teaching the subject ?	Not confident	[A] [B] [C]			Very confident

12	Please state your preparation work time for the subject

[_____] hr/wk

13	Please state the time you spent on marking the assignments/ coursework of the subject

[_____] hr/wk

Teaching methodology :

14 Volume & content of the standard lecture notes used are

[A] Too much   [B] About right   [C] Insufficient   [D] No idea   [E] Not applicable

15 Do you think the adoption of standard lecture notes is good for teaching and learning

Excellent   [A] [B] [C] [D]   Even worse

16 Do you follow the standard lecture notes in delivering the lectures ?

[A] Not at all   [B] Treat it as reference   [C] To some extent   [D] Very much   [E] Not applicable

17 What teaching aids do you use in lectures/tutorials ? Please state the percentage of contact hours in using these aids *(Total of 100%)*

A [_____] Computer assisted   B [_____] Overhead projector   C [_____] Video/film/ slides   D [_____] Internet/ web-sites   E [_____] None

18 Do you let students ask questions in lectures ?

Very often   [A] [B] [C] [D]   Not allowed

19 If you have the choice, would you like to continue teaching the subject next year ?

[A] Yes   [B] No

20 Please state other comments on the subject : _____

_____

(B) Comment on Course(s)

(i) Course title : _____ (FT) (Yr. 1 / 2 / 3)*

		A	B	C	D	
21	Do you think the course is difficult to the students ?	Very easy	A	B	C	D	Very difficult
22	What is the English proficiency of majority of the students ?	Very poor	A	B	C	D	Very good
23	Are the subjects integrated horizontally in the course curriculum ?	Very well	A	B	C	D	Very poorly
24	Are the subjects integrated vertically in the course curriculum ?	Very poorly	A	B	C	D	Very well
25	Does the course curriculum meet the aims and objectives of the course ?	Well met	A	B	C	D	Not at all
26	Does the course curriculum meet the demand/expectations of the industry/profession ?	Not at all	A	B	C	D	Well met
27	Does the current course administration/management promote the quality of the course ?	Very much	A	B	C	D	Not at all
28	Is the current course administration/management efficient and effective ?	Not at all	A	B	C	D	Very much

29 What is your view on the quality of the course ?

A	B	C	D	E
Excellent	Good	Needs improvement	Poor	No idea

30 Does the current course administration/management provide the 'quality assurance' to the course ?

A	B	C	D
Excellent	Good	Poor	No idea

E
Needs change / improvement

Please state the details of change/improvement :

_____

_____

31 Please state other comments on the course : _____

_____

(C) Comment on IT Teaching :

32 Do you support the use of IT in teaching   [A]   [B]
                                                                        Yes   No

Computer proficiency - Are you familiar with the application of the following :

No.	Question		A	B	C	D	
33	MS Office	Very familiar	A	B	C	D	No knowledge
34	Visual Basic	No knowledge	A	B	C	D	Very familiar
35	Netscape/Internet Explorer	Very familiar	A	B	C	D	No knowledge
36	Do you expect difficulty to prepare lecture notes in IT approach ?	Very easy	A	B	C	D	Very difficult
			E No idea				
37	Do you expect difficulty to prepare tutorial and laboratory sheet in IT approach ?	Very easy	A	B	C	D	Very difficult
			E No idea				
38	Do you think the preparation work in IT approach would be time-consuming ?	Very time consuming	A	B	C	D	Not at all
39	Do you anticipate the use of IT in teaching will cause problems in course administration/management ?	Very likely	A	B	C	D	Very unlikely
40	Do you think the use of IT in teaching would improve the quality of the course in teaching and learning ?	Very much	A	B	C	D	Even worse
			E No idea				

41 Other comments : _____

_____

_____

(D) Comment on ISO9000 Quality Management System :

No.	Question		A	B	C	D	
42	Are you familiar with ISO9000 System ?	Very familiar	A	B	C	D	Not at all
43	Do you support implementing ISO9000 quality system in educational organization ?		A Yes	B No	C No idea		
44	Do you support implementing ISO9000 quality system in the construction industry in Hong Kong ?		A Yes	B No	C No idea		
45	Do you believe implementing ISO9000 would improve the quality of teaching and learning ?	Very strongly	A	B	C	D	Not at all
			E No idea				

If ISO9000 quality system is implemented in our organization,

46	do you anticipate an increase in the amount of paper work ?	Reduced	A	B	C		Increase a lot
			D No change		E No idea		
47	do you anticipate improvement in efficiency of administrative performance ?	Very much	A	B	C	D	Not at all
			E No idea				
48	do you anticipate improvement in quality assurance of the course(s) ?	Even worse	A	B	C	D	Very much
49	do you believe that ISO9000 certification will enhance the reputation of IVE ?	Very much	A	B	C	D	Not at all

50 Other comments on ISO9000 quality system on 'course quality and management' : _____

_____

_____

(E) <u>General comment :</u>

51	Your work load on teaching is	Very light	A	B	C	D	Very heavy
52	Your work load on administration is	Very light	A	B	C	D	Very heavy
53	Computer facilities provided is	Very adequate	A	B	C	D	Very inadequate
54	Support services provided is	Very adequate	A	B	C	D	Very inadequate
55	Support in quality teaching from management is	Very adequate	A	B	C	D	Very inadequate
56	Cooperation of staff with students is	Very poor	A	B	C	D	Very good
57	Cooperation among staff in the Department is	Very good	A	B	C	D	Very poor
58	Cooperation among staff in the College is	Very poor	A	B	C	D	Very good
59	Staff development opportunities & support is	Adequate		A	B		Inadequate
60	Research opportunities & support is	Adequate		A	B		Inadequate
61	Do you think adequate contact with the industry/profession would improve the quality of the course ?	Even worse	A	B	C	D	Very much
62	Do you think the current administrative/management system in the organisation is helpful to the quality assurance of the course ?	Very much	A	B	C	D	Not at all

63　Were you involved in relevant consultancy work in the last 12 months ?

A Yes	B No

64　Were you involved in approved outside work, apart from evening teaching, in the last 12 months?
(State the nature of outside work if the answer 'yes')

A No	B Yes

Nature : _____

_____

65　Were or are you actively involved in the activities of related professional body(ies) ?
(If the answer is 'yes', please state the nature of involvement.)

A Yes	B No

Nature : _____

_____

_____

66　Which topic(s) would you like to emphasize or expand when reviewing the course curriculum in future ?

_____

_____

67　Other comments : _____

_____

_____

68　Post in Department :　PL / SL / L / AL / Other _____

69　Total number of time-tabled student contact hours per week : _____

☺

☺　☺

End of Questionnaire

Thank you for your co-operation

ACADEMIC STAFF QUESTIONNAIRE (Ver 2)

{Note : 1. *Your answer is purely your personal view/opinion base on your teaching experience and is kept in strict confidence.*
2. *Please CIRCLE your answers in the questionnaire.}*

(A) Comment on the subject(s) taught :

(Use separate sheet for each subject)

(i) Subject title : _____ (FT) (Yr. 1 / 2 / 3)*

1	Relevancy of the subject to the course	Very irrelevant	A	B	C	D	Very relevant
2	Relevancy of the subject syllabus to the construction industry and the profession	Very irrelevant	A	B	C	D	Very relevant
3	Difficulty of this subject to the students	Very difficult	A	B	C	D	Very easy
4	Learning attitude of students in the subject	Very good	A	B	C	D	Very poor
5	Consistency of student performance in the subject	Very inconsistent	A	B	C	D	Very consistent
6	Contact hours of lecture classes of the subject	Insufficient	A	B	C	D	Too long
7	Contact hours of tutorial classes of the subject	Too Long	A	B	C	D	Insufficient
8	Contact hours of laboratory/ practical classes of the subject	Insufficient	A	B	C	D	Too long
9	Usefulness of tutorial classes	Very unhelpful	A	B	C	D	Very useful

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10	Coordination among subject lecturers teaching the same subject	Very insufficient	[A] [B] [C] [D]		Too much
11	Are you confident in teaching the subject ?	Very confident	[A] [B] [C]		Not confident

12 Please state your preparation work time for the subject	[____] hr/wk
13 Please state the time you spent on marking the assignments/ coursework of the subject	[____] hr/wk

Teaching methodology :

14 Volume & content of the standard lecture notes used are

[A] [B] [C] [D] [E]
Too much   About right   Insufficient   No idea   Not applicable

15 Do you think the adoption of standard lecture notes is good for teaching and learning

Excellent [A] [B] [C] [D] Even worse

16 Do you follow the standard lecture notes in delivering the lectures ?

[A] [B] [C] [D] [E]
Not at all   Treat it as reference   To some extent   Very much   Not applicable

17 What teaching aids do you use in lectures/tutorials ? Please state the percentage of contact hours in using these aids *(Total of 100%)*

A [____] B [____] C [____] D [____] E [____]
Computer assisted   Overhead projector   Video/film/ slides   Internet/ web-sites   None

18 Do you let students ask questions in lectures ?	Not allowed	[A] [B] [C] [D]		Very often

19 If you have the choice, would you like to continue teaching the subject next year ?

[A]   [B]
Yes   No

20 Please state other comments on the subject : _____

_____

_____

(B) Comment on Course(s)

(i) Course title : _____ (FT) (Yr. 1 / 2 / 3)*

21	Do you think the course is difficult to the students ?	Very difficult	[A] [B] [C] [D]	Very easy
22	What is the English proficiency of majority of the students ?	Very good	[A] [B] [C] [D]	Very poor
23	Are the subjects integrated horizontally in the course curriculum ?	Very poorly	[A] [B] [C] [D]	Very well
24	Are the subjects integrated vertically in the course curriculum ?	Very well	[A] [B] [C] [D]	Very poorly
25	Does the course curriculum meet the aims and objectives of the course ?	Not at all	[A] [B] [C] [D]	Well met
26	Does the course curriculum meet the demand/expectations of the industry/profession ?	Well met	[A] [B] [C] [D]	Not at all
27	Does the current course administration/management promote the quality of the course ?	Not at all	[A] [B] [C] [D]	Very much
28	Is the current course administration/management efficient and effective ?	Very much	[A] [B] [C] [D]	Not at all

29 What is your view on the quality of the course ?

[A] Excellent   [B] Good   [C] Needs improvement   [D] Poor   [E] No idea

30 Does the current course administration/management provide the 'quality assurance' to the course ?

[A] Excellent   [B] Good   [C] Poor   [D] No idea   and

[E] Needs change / improvement   Please state the details of change/improvement :

_____

_____

31 Please state other comments on the course : _____

_____

_____

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(C) Comment on IT Teaching :

32   Do you support the use of IT in teaching   [A]   [B]
                                                          Yes   No

Computer proficiency - Are you familiar with the application of the following :

33	MS Office	No knowledge	[A]	[B]	[C]	[D]	Very familiar
34	Visual Basic	Very familiar	[A]	[B]	[C]	[D]	No knowledge
35	Netscape/Internet Explorer	No knowledge	[A]	[B]	[C]	[D]	Very familiar
36	Do you expect difficulty to prepare lecture notes in IT approach ?		[A] No idea				
		Very easy	[B]	[C]	[D]	[E]	Very difficult
37	Do you expect difficulty to prepare tutorial and laboratory sheet in IT approach ?		[A] No idea				
		Very easy	[B]	[C]	[D]	[E]	Very difficult
38	Do you think the preparation work in IT approach would be time-consuming ?	Very time consuming	[A]	[B]	[C]	[D]	Not at all
39	Do you anticipate the use of IT in teaching will cause problems in course administration/management ?	Very likely	[A]	[B]	[C]	[D]	Very unlikely
40	Do you think the use of IT in teaching would improve the quality of the course in teaching and learning ?		[A] No idea				
		Very much	[B]	[C]	[D]	[E]	Even worse

41   Other comments : _____

_____
_____

(D) Comment on ISO9000 Quality Management System :

42	Are you familiar with ISO9000 System ?	Not at all	[A]	[B]	[C]	[D]	Very familiar
43	Do you support implementing ISO9000 quality system in educational organization ?		[A] Yes	[B] No	[C] No idea		
44	Do you support implementing ISO9000 quality system in the construction industry in Hong Kong ?		[A] Yes	[B] No	[C] No idea		
45	Do you believe implementing ISO9000 would improve the quality of teaching and learning ?		[A] No idea				
		Very strongly	[B]	[C]	[D]	[E]	Not at all

If ISO9000 quality system is implemented in our organization,

No.	Question	Left	Options	Right
46	do you anticipate an increase in the amount of paper work ?		A (No change) B (No idea)	
		Reduced	C D E	Increase a lot
47	do you anticipate improvement in efficiency of administrative performance ?		A (No idea)	
		Very much	B C D E	Not at all
48	do you anticipate improvement in quality assurance of the course(s) ?	Very much	A B C D	Even worse
49	do you believe that ISO9000 certification will enhance the reputation of IVE ?	Not at all	A B C D	Very much

50   Other comments on ISO9000 quality system on 'course quality and management' : _____

_____

(E) <u>General comment :</u>

No.	Question	Left	Options	Right
51	Your work load on teaching is	Very heavy	A B C D	Very light
52	Your work load on administration is	Very heavy	A B C D	Very light
53	Computer facilities provided is	Very inadequate	A B C D	Very adequate
54	Support services provided is	Very inadequate	A B C D	Very adequate
55	Support in quality teaching from management is	Very inadequate	A B C D	Very adequate
56	Cooperation of staff with students is	Very good	A B C D	Very poor
57	Cooperation among staff in the Department is	Very poor	A B C D	Very good
58	Cooperation among staff in the College is	Very good	A B C D	Very poor
59	Staff development opportunities & support is	Inadequate	A B	Adequate
60	Research opportunities & support is	Inadequate	A B	Adequate
61	Do you think adequate contact with the industry/profession would improve the quality of the course ?	Very much	A B C D	Even worse
62	Do you think the current administrative/management system in the organisation is helpful to the quality assurance of the course ?	Not at all	A B C D	Very much

63   Were you involved in relevant consultancy work in the last 12 months ?

A	B
Yes	No

64   Were you involved in approved outside work, apart from evening teaching, in the last 12 months ?
(State the nature of outside work if the answer is **'yes'**)

A	B
No	Yes

Nature : _____

_____

_____

65   Were or are you actively involved in the activities of related professional body(ies) ?
(If the answer is **'yes'** *, please state the* nature of involvement.)

A	B
Yes	No

Nature : _____

_____

_____

66   Which topic(s) would you like to emphasize or expand when reviewing the course curriculum in future ?

_____

_____

_____

67   Other comments : _____

_____

_____

68   Post in Department :   PL / SL / L / AL / Other

69   Total number of time-tabled student contact hours per week : _____

☺

☺   ☺

End of Questionnaire

Thank you for your co-operation

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$$\boxed{\textbf{\textit{Pilot Study}}}$$

STUDENT QUESTIONNAIRE

{Note: Please read the attached guideline before completing the questionnaire.}

A.   Background

| 1 | Have you studied Form 6 ? | | | | | | A Yes | | | B No. |

1   Have you studied Form 6 ?   [A] Yes   [B] No.

2   Have you studied Form 7 ?   [A] Yes   [B] No.

3   Are you a TI graduate ?   [A] Yes   [B] No.

4   Do you have any practical experience   [A] Yes   [   ] No. of years   [B]   No
     in construction before coming to study
     the course ?

5   Do you have any financial hardship ?   A lot   [A]   [B]   [C]   [D]   None

B.   Ability

6   Your English proficiency is   Very good   [A]   [B]   [C]   [D]   Very poor

7   Your ability to express is   Very good   [A]   [B]   [C]   [D]   Very poor

8   Do you have difficulty in progressing   A lot   [A]   [B]   [C]   None
     with the course ?

C.   Effort

9   Your time spent on homework per   [A]   [B]   [C]   [D]   [E]
     week (Hrs.) is   More than 25   25-20   19-15   14-10   Less than 10

10   Your time spent on year project per   [A]   [B]   [C]   [D]   [E]
     week (Hrs.) is   More than 25   25-20   19-15   14-10   Less than 10

11   Your total time spent on studying the   [A]   [B]   [C]   [D]   [E]
     entire course is   More than 25   25-20   19-15   14-10   Less than 10

D. Comments about the College

12	Sitting places in the library are	Too many	A	B	C	D	Very insufficient
13	Noise level in the library is	Too noisy	A	B	C	D	Very quiet
14	How often do you use library books for your study?	Very often	A	B	C	D	Never
15	Library opening hour is	Too short	A	B	C	D	Too long
16	Service of library staff is	Very helpful	A	B	C	D	Very unhelpful
17	How often do you use library facilities per week ?	Very often	A	B	C	D	Never
18	Do you find the SAU helpful ?	Very helpful	A	B	C	D	Unhelpful
19	Are you satisfied with the College computing facilities?	Very satisfied	A	B	C	D	Very unsatisfied

20 Please make suggestions which you feel would make the college a better place to study.

_____

_____

E. IT Teaching

21	Do you support IT Teaching?	Strongly support	A B C D E	Not support
22	Do you have a computer at home ?		A Yes B No	
23	Course Outline & Teaching Schedule		A Yes B No	
24	Lecture Notes		A Yes B No	
25	Tutorial and Laboratory Instruction Sheets		A Yes B No	
26	How often do you "surf the net" ?	Very often	A B C D	Very seldsom

F. General Comments

27	Do you find the course useful to your future career ?	Very useful	A B C D E No Idea	Very useless
28	Are you satisfied with the course in general ?	Very satisfied	A B C D	Very disappointed
29	Do you think this type of student questionnaire could improve the quality of the course ?		A Very helpful B Helpful C Not at all D Wasting time	
30	Other comments : _____			

_____

G. Comment on the Course Subjects

How do you rate the subject in the course?

#	Subject	Aspect	Left label	A	B	C	D	E	Right label
1	*English &*	Difficulty	Very easy	A	B	C	D		Very difficult
2	*Communication*	Work load	Very light	A	B	C	D		Too much
3	*for Construction*	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4	(Code 053)	Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology[2]		A	B	C	D	E	

Others :-

How do you find the lecture notes?

#	Aspect	Left label	A	B	C	D	E	Right label
12	● Conciseness	Very poor	A	B	C	D		Excellent
	● Difficulty to understand	Very easy	A	B	C	D		Very difficult
	● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13	What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14	Methodology of tutorial[3] (Tick appropriate boxes)		A	B	C	D	E	

Others :-

#	Aspect	Left label	A	B	C	D	Right label
15	Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D	Not at all
16	Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D	Not at all
17	Does the grade you get in this subject meet your expectation ?			A (Yes)		B (No)	
18	How do you rate the value of the essential reference books ?	Very useful	A	B	C	D	No use at all
				E (No idea)			
19	If you have the choice, would you select the subject ?			A (Yes)		B (No)	

#	Category	Question	Left label	Options	Right label
1	Structural	Difficulty	Very easy	A B C D	Very difficult
2	Analysis I	Work load	Very light	A B C D	Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	A B C D	Very boring
4		Support Services provided by the College[1]	Very adequate	A B C D	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A B C D	Very poor
6		Teacher's communication skill	Very poor	A B C D	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A B C D	Excellent
8		Teacher's explanation towards the subject material	Very poor	A B C D	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A B C D	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A B C D	Very unfair
11		Teaching Methodology[2]		A B C D E	
		Others :-			

How do you find the lecture notes?

#		Question	Left label	Options	Right label
12		• Conciseness	Very poor	A B C D	Excellent
		• Difficulty to understand	Very easy	A B C D	Very difficult
		• Coverage of lecture notes	Very sufficient	A B C D	Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A B C D E	
14		Methodology of tutorial[3] (Tick appropriate boxes)		A B C D E	
		Others :-			
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A B C D	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A B C D	Not at all
17		Does the grade you get in this subject meet your expectation ?		A (Yes) B (No)	
18		How do you rate the value of the essential reference books ?	Very useful	A B C D E (No idea)	No use at all
19		If you have the choice, would you select the subject ?		A (Yes) B (No)	
20		Methodology of laboratory/case study session[4] (Tick appropriate boxes)		A B C D E	
		Others :-			

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#		Question	Left label	A	B	C	D	Right label
1	*Projects III*	Difficulty	Very easy	A	B	C	D	Very difficult
2	(Code 903)	Work load	Very light	A	B	C	D	Too much
3		Your degree of interest in the subject	Very interesting	A	B	C	D	Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	A	B	C	D	Very inadequatte
5		Helpfulness from the Supervisor(s)	Excellent	A	B	C	D	Very poor
6		Supervisor's communication skill	Very poor	A	B	C	D	Excellent
7		Supervisor's enthusiasm in supervision	Very poor	A	B	C	D	Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	A	B	C	D	Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	A	B	C	D	Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	A	B	C	D	Excellent
11		Does the grade you get meet your expectation ?		A Yes	B No			
12		Do you think the project work is helpful to your study of the course ?	Very helpful	A	B	C	D	Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?		A Yes	B No			

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Student No. : _____   Student Name : _____

Course : _____   Year : _____

Sex : _____

End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Student Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please *circle* your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4. (a) (iii) Use **the answer sheet marked with 'Version Number'** for questions
               1 – 30 in sections A to F.
           (ii) Use separate answer sheet for **each subject**.

    (b) Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied last year.

    (c) Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

    (d) Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

    [1] *Support services include computer facilities, laboratory equipment and other teaching materials.*

    6   For Teaching Methodology in Lectures, you may find the following guidelines useful :
    Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
    Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards.
    Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
    Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
    Answer E: Others

    7   For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :
    Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
    Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
    Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] For methodology of laboratory / case study session, you may find the following guidelines useful :

Answer A: Laboratory / case study sessions <u>are fully utilised</u> to perform experiments / case study.

Answer B: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions <u>are NOT fully utilised</u> to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You have to mark the "year" column and ignore the "class/group" and "paper ID" of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

6. *Thank you for your co-operation and help to complete the questionnaire.*

| **Pilot Study** |

GRADUATE QUESTIONNAIRE

{Note: 1. Please read the attached guideline before completing the questionnaire.}

A. GRADUATE BACKGROUND

Year of graduation : _____

~~Course of Graduation :~~_____

~~Sex:~~_____~~[(1) for male, (2) for female]~~

B. IF YOU ARE EMPLOYED

1. **Nature of the company :**

| A | B | C | D |
Government   Consultant   Contractor   Material Supplier /
                                          Testing

| E |
Others *(Please specify)* _____

2. **Position in company/office**

| A | B | C | D |
Assistant Engineer /   Site Supervisor /   Quantity / Site   Technical Officer
Engineer   Engineer   Surveyor

| E |
Others *(Please specify)* _____

3. **Basic Monthly Salary**

A	B	C	D	E
Above $14,000	$14,000 to $12,001	$12,000 to $10,001	$10,000 to $8,000	Below $8,000

4. **You get or expect to have promotion after working for :**

A	B	C	D	E
Above 4 yrs	4 - 3 yrs	3 - 2 yrs	2 - 1 yr	No promotion

5. **Are you attending/preparing to attend a part-time course** *a further study programme* **?**

A	B
Yes	No

6. **How long have you been working in this company/office ?**

☐ months

7. **Your satisfaction with the employment/work**

Very satisfied ☐ A ☐ B ☐ C ☐ D Very disappointed

C. IF YOU ARE UNEMPLOYED

8. **Indicate your current status :**

A	B
Unemployed but attending a course	Unemployed

D. COMMENT ON THE COURSE

9.	Usefulness of the Course to your employment	Not useful	[A]	[B]	[C]		Very useful
10.	Usefulness of the Course to your further study	Not useful	[A]	[B]	[C]		Very useful
11.	Satisfaction with the Course in general	Very satisfied	[A]	[B]	[C]	[D]	Very disappointed
12.	Engineering Concept of the Course	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
13.	Practical Applications	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
14.	Industrial Training	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
15.	Environmental Concerns	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
16.	Safety Issues	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

II) Technical Proficiency

17.	Analysis aspects	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
18.	Design aspects	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
19.	Construction aspects	Very adequate	[A]	[B]	[C]	[D]	Very inadequate

III) Drafting Skills

20.	CAD Skills	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
21.	Manual Drawing Skills	Very adequate	[A]	[B]	[C]	[D]	Very inadequate

IV) Computer Skills

22.	Proficiency in using personal computers	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
23.	Proficiency in using general purpose softwares	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
24.	Proficiency in using engineering/technical softwares	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

V) Language Skills

25.	Oral English skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
26.	Written English skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
27.	Written Chinese skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
28.	Putonghua skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

VI) Personal Attributes

29.	Problem solving skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
30.	Cooperation with others	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
31.	Sense of responsibility	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
32.	Communication skills	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
33.	Initiative	Very inadequate	[A]	[B]	[C]	[D]	Very adequate
34.	Creativity	Very inadequate	[A]	[B]	[C]	[D]	Very adequate

35. **Other comments :**

[A]
Comments

[B]
No Comment

Comments : *(Use supplementary sheets if necessary)* _____

_____

_____

_____

E. FURTHER STUDY *(To be answered by further studying graduates only)*

36. **Please indicate the institution that offers you the course is a**

[A]
Local university

[B]
Overseas university

[C]
Other educational
institution

Name of the Institution _____ *(please specify)*

37. The course of study is a

A	B	C	D
Higher Degree programme	Degree programme	Sub-degree programme	Professional development programme

E
Others *(please specify)* _____

Name of the Course _____ *(please specify)*

Now studying in _____ **year / level** *(please specify)*

38. Why do you go for further study ?

A	B	C	D
To become a professional engineer	To learn more	For self-interest	No employment

E
Others *(Please specify)* _____

Helpfulness of the Higher Diploma course to your further study

~~39. Do you find the higher diploma course helpful to your current further study ?~~

~~Not at all~~ | A | B | C | D | ~~Very helpful~~

~~40.~~
39. Does the working experience help your current further study ?

Not at all | A | B | C | D | Very helpful | E
No working experience

~~41.~~
40. To what extent the content of your current further study had been covered in your higher diploma course ?

A	B	C	D	E
Above 45%	45 - 30%	30 - 15%	15 - 0%	0%

~~42.~~
41. Do you find the current course of further study difficult or easy ?

Very difficult | A | B | C | D | Very easy

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Teaching Methodology

43. Compare the teaching methodology of the current course of further study with that
42. of the higher diploma course. It is found,

Even worse   [A]   [B]   [C]   [D]   Much better   [E] No further study

44. Any other comments :
43.

          [A]   [B]
      Comment   No comment

Details of comment : _____

_____

_____

F Comment on the Course Subjects

How do you rate the subject in the course?

#	Subject	Question	Left	A	B	C	D	E	Right
1	*English &*	Difficulty	Very easy	A	B	C	D		Very difficult
2	*Communication*	Work load	Very light	A	B	C	D		Too much
3	*for Construction*	Your degree of interest in the subject	Very interesting	A	B	C	D		Very boring
4	(Code 053)	Support Services provided by the College[1]	Very adequate	A	B	C	D		Very inadequate
5		Quality of teaching of the Lecturer	Excellent	A	B	C	D		Very poor
6		Teacher's communication skill	Very poor	A	B	C	D		Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	A	B	C	D		Excellent
8		Teacher's explanation towards the subject material	Very poor	A	B	C	D		Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	A	B	C	D		Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	A	B	C	D		Very unfair
11		Teaching Methodology[2]		A	B	C	D	E	
		Others :-							
		How do you find the lecture notes?							
12		● Conciseness	Very poor	A	B	C	D		Excellent
		● Difficulty to understand	Very easy	A	B	C	D		Very difficult
		● Coverage of lecture notes	Very sufficient	A	B	C	D		Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		A	B	C	D	E	
14		Methodology of tutorial[3] (*Tick appropriate boxes*)		A	B	C	D	E	
		Others :-							
15		Are the tutorials helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	A	B	C	D		Not at all
17		Does the grade you get in this subject meet your expectation ?			A Yes		B No		
18		How do you rate the value of the essential reference books ?	Very useful	A	B	C	D		No use at all
				E No idea					
19		If you have the choice, would you select the subject ?			A Yes		B No		

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#	Category	Question	Left	Options	Right
1	**Structural**	Difficulty	Very easy	[A] [B] [C] [D]	Very difficult
2	**Analysis I**	Work load	Very light	[A] [B] [C] [D]	Too much
3	(Code 736)	Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]	Very boring
4		Support Services provided by the College[1]	Very adequate	[A] [B] [C] [D]	Very inadequate
5		Quality of teaching of the Lecturer	Excellent	[A] [B] [C] [D]	Very poor
6		Teacher's communication skill	Very poor	[A] [B] [C] [D]	Excellent
7		Teacher's enthusiasm in teaching the subject	Very poor	[A] [B] [C] [D]	Excellent
8		Teacher's explanation towards the subject material	Very poor	[A] [B] [C] [D]	Excellent
9		Accessibility of the teacher for consultation/ discussion during office hour	Very easy	[A] [B] [C] [D]	Very difficult
10		Do you think the method of assessing/ evaluating your assignment/coursework is fair ?	Very fair	[A] [B] [C] [D]	Very unfair
11		Teaching Methodology?		[A] [B] [C] [D] [E]	
		Others :-			
12		How do you find the lecture notes? ● Conciseness ● Difficulty to understand ● Coverage of lecture notes	Very poor Very easy Very sufficient	[A] [B] [C] [D] [A] [B] [C] [D] [A] [B] [C] [D]	Excellent Very difficult Very insufficient
13		What are the teaching aids used in the lecture ? (A) Overhead Projector (B) Videos / Slides (C) Computers, e.g. Power Point (D) Others (E) None		[A] [B] [C] [D] [E]	
14		Methodology of tutorial[3] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	
		Others :-			
15		Are the tutorials helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
16		Is the laboratory/practical work helpful to the study of the subject ?	Very helpful	[A] [B] [C] [D]	Not at all
17		Does the grade you get in this subject meet your expectation ?		[A] Yes [B] No	
18		How do you rate the value of the essential reference books ?	Very useful	[A] [B] [C] [D] [E] No idea	No use at all
19		If you have the choice, would you select the subject ?		[A] Yes [B] No	
20		Methodology of laboratory/case study session[4] (Tick appropriate boxes)		[A] [B] [C] [D] [E]	
		Others :-			

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1	*Projects III*	Difficulty	Very easy	[A] [B] [C] [D]		Very difficult
2	(Code 903)	Work load	Very light	[A] [B] [C] [D]		Too much
3		Your degree of interest in the subject	Very interesting	[A] [B] [C] [D]		Very boring
4		Facilities provided by the College[1] for the project work	Very adequate	[A] [B] [C] [D]		Very inadequatte
5		Helpfulness from the Supervisor(s)	Excellent	[A] [B] [C] [D]		Very poor
6		Supervisor's communication skill	Very poor	[A] [B] [C] [D]		Excellent
7		Supervisor's enthusiasm in supervision	Very poor	[A] [B] [C] [D]		Excellent
8		How do you rate the supervisor's explanation of the project ?	Very poor	[A] [B] [C] [D]		Excellent
9		What is the accessibility of the supervisor for consultation/discussion during office hour ?	Very poor	[A] [B] [C] [D]		Excellent
10		Do you think the method of assessing/ evaluating your project work is fair ?	Very poor	[A] [B] [C] [D]		Excellent
11		Does the grade you get meet your expectation ?		[A] [B] Yes No		
12		Do you think the project work is helpful to your study of the course ?	Very helpful	[A] [B] [C] [D]		Not at all
13		If you have the choice, would you select "Project" as one of your subjects ?		[A] [B] Yes No		

End of Questionnaire

Thank you for your co-operation

Guidelines for Completing Graduate Questionnaire

1. All data collected in this survey will be used strictly for the research and academic quality improvement purposes only.

2. Your answer is purely your personal view/opinion and is kept in strict confidence.

3. Please *circle* your answers in the questionnaire and also mark the answers onto the attached answer sheet(s).

4. (a) (iii) Use **the answer sheet marked with 'Version Number'** for questions
        1 – 43 in sections B to E.
        (ii) Use separate answer sheet for **each subject**.

    (b) Questionnaire on the subjects is to survey your view/opinion of the subjects you have studied in the final year of the course.

    (c) Each subject has a **one page** questionnaire. Every subject takes **one answer sheet**. Mark the "course"; "student number"; "subject code"; "page number" onto the special code column, and your answers to the questions for every answer sheet (ie. every subject).

    (d) Some questions are marked with [1, 2, 3 & 4] and the corresponding explanations are listed below :

        [1] *Support services include computer facilities, laboratory equipment and other teaching materials.*

        6 For Teaching Methodology in Lectures, you may find the following guidelines useful :
        Answer A: Lecturer spends most of his time in copying his handout or teaching materials on whiteboard during lecture.
        Answer B: Lecturer reads out his handout word by word in the lecture, and gives handout afterwards.
        Answer C: Lecturer **has given** advance copy of the handout and **does not** explain the notes in the lecture.
        Answer D: Lecturer **has given** advance copy of the handout, the lecturer highlights and explains the key points in the lecture.
        Answer E: Others

        7 For teaching methodology in Tutorial Sessions, you may find the following guidelines useful :
        Answer A: Lecturer simply asks the class if they have any question, if not he would dismiss the class.
        Answer B: Lecturer asks the class to do problems throughout the tutorial, and hand in all the answers by the end of the session.
        Answer C: Lecturer asks the class to do problem assignment and raise questions if they have. The tutorial assignment could be completed at home and hand in later.

Answer D: Lecturer recapitulates the main points of previous lecture, and answer questions from students.

Answer E: Others

[4] *For methodology of laboratory / case study session, you may find the following guidelines useful :*

Answer A: Laboratory / case study sessions **are fully utilised** to perform experiments / case study.

Answer B: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. However the lecturer utilises the remaining time for revision / solving queries from students.

Answer C: Laboratory / case study sessions **are NOT fully utilised** to do the experiments / case study. There is plenty of time unused and very often early dismissal.

Answer D: Laboratory/case study sessions are not conducted and students do not have to attend.

(e) You can ignore the "year", "class/group" and "paper ID" columns of the answer sheet.

(f) Sample of marking the answer sheet is given below.

(g) If answer sheets are not sufficient, you can use photo-copies of the answer sheet.

5. Please return the completed questionnaire and answer sheets using the enclosed stamped and self-addressed envelope.

6. *Thank you for your co-operation and help to complete the questionnaire.*

| **Pilot Study** |

EMPLOYER QUESTIONNAIRE

{Note: *1.*   *You may omit any of the following items that you would not like to disclose.*
       2.   *Please* <u>*CIRCLE*</u> *your answers in the questionnaire.}*

1.   **Nature of the company :**

          | A | | B | | C | | D |
        Government   Consultant   Contractor   Material Supplier / Testing

          | E |
        Others *(Please specify)*   _____

2.   **Total number of graduates from the <u>Hong Kong Technical College (Tsing Yi)</u> with an award of <u>Higher Diploma in Civil / Structural Engineering</u> employed in your company / office :**

       | A | | B | | C | | D | | E |
     Above 6   6 - 5   4 - 3   2 - 1   None

3.   **Number of our graduates involved in <u>Site Supervision</u>**

       | A | | B | | C | | D | | E |
     Above 6   6 - 5   4 - 3   2 - 1   None

4.   **Number of our graduates involved in <u>Design / Drafting</u>**

       | A | | B | | C | | D | | E |
     Above 6   6 - 5   4 - 3   2 - 1   None

5.   **Number of our graduates involved in <u>Land/Engineering Surveying</u>**

       | A | | B | | C | | D | | E |
     Above 6   6 - 5   4 - 3   2 - 1   None

6. Number of our graduates involved in <u>Quantity Surveying</u>

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

7. Number of our graduates involved in <u>Material Supplies/Testing</u>

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

8. Number of our graduates involved in <u>duties that are not related to items 3 to 7 above</u>

A	B	C	D	E
Above 6	6 - 5	4 - 3	2 - 1	None

9. Give the number of Higher Diploma graduates employed by you has resigned after working :

A	B	C	D	E
None resigned	Over 2 yrs	2 - 1 yr	1 - 1/2 yr	Less than 1/2 yr

The Higher Diploma graduates employed by you, who are studying a degree programme, are :-

10. Sponsored by your firm

A	B
Yes	No

11. Studying in

A	B	C	D
Full-time	Part-time	Overseas	None

12. In your opinion, are there sufficient Higher Diploma graduates meeting the market demand at the present time in the construction industry ?

A	B	C	D
Not enough	About right	Too many	No idea

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Comments on the Technical Proficiency of our Graduate(s) under your employment

		Very adequate	Adequate	Inadequate	Very Inadequate	Cannot comment
	Engineering Knowledge :					
13.	Basic Concepts	A	B	C	D	E
14.	in Construction	A	B	C	D	E
15.	in Analysis	A	B	C	D	E
16.	in Design	A	B	C	D	E
17.	Practical Applications	A	B	C	D	E
18.	Environmental Concerns	A	B	C	D	E
19.	Safety Issues	A	B	C	D	E
	Drafting Skill :					
20.	Computer-aided Drawing	A	B	C	D	E
21.	Manual Drawing	A	B	C	D	E
	Computer Skill :					
22.	Use of personal computer	A	B	C	D	E
23.	General purpose software	A	B	C	D	E
24.	Engineering software	A	B	C	D	E

		Very poor	Poor	Good	Excellent
	Language Skill :				
25.	Oral English	A	B	C	D
26.	Written English	A	B	C	D
27.	Putonghua	A	B	C	D
28.	Cantonese	A	B	C	D

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Comments on our Graduates' Personal Attributes

		Excellent	Good	Poor	Very poor	Cannot comment
29.	Problem solving skill	A	B	C	D	E
30.	Cooperation	A	B	C	D	E
31.	Sense of responsibility	A	B	C	D	E
32.	Ability to express	A	B	C	D	E
33.	Initiative	A	B	C	D	E
34.	Creativity	A	B	C	D	E

35.. Which topic(s) would you like us to emphasize/introduce to or delete from the course in future ?

A	B
Comments	No Comment

Details of comment : _____

_____

36. In general, do you feel that our Higher Diploma graduate(s) employed by your company have sufficient knowledge/training to perform the duties in your office ?

A	B
Yes	No

From the performance of the employees, you find :

37.	the subjects taught in the Higher Diploma course are	Very useful	A	B	C	D	Not useful
38.	the Course in general is	Excellent	A	B	C	D	Very poor

39. Apart from civil and structural engineering, what other new course(s) is required to meet your need ?

Please specify : _____

_____

40. Has your company/office got certification of ISO-9000 ?

A	B
Yes	No

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Comment on Certification of ISO-9000

41.	Cost of operation is	Greatly increased	A	B	C	D	Greatly reduced
42.	Operation efficiency is	Greatly improved	A	B	C	D	Greatly reduced
43.	Quality of output/product is	Even worse	A	B	C	D	Greatly improved
44.	Response from staff is	Poorly received	A	B	C	D	Well received
45.	Profit/productivity is	Greatly increased	A	B	C	D	Greatly reduced
46.	The system is beneficial to the company/staff in long-term	Very much	A	B	C	D	Not at all

47. Any other comments :

A   B
Comment   No comment

Details of comment : _____

_____

_____

End of Questionnaire

Thank you for your co-operation

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ACADEMIC STAFF QUESTIONNAIRE

(Note: 1. *Your answer is purely your personal view/opinion base on your teaching experience and is kept in strict confidence.*
2. *Please UNDERLINE your answers in the questionnaire.)*

(A) Comment on the subject(s) taught :
(Use separate sheet for each subject)

(i) Subject title : _____ (FT) (Yr. 1 / 2 / 3)*

1	Relevancy of the subject to the course	Very relevant	A	B	C	D	Very irrelevant
2	Relevancy of the subject syllabus to the construction industry and the profession	Very relevant	A	B	C	D	Very irrelevant
3	Difficulty of this subject to the students	Very easy	A	B	C	D	Very difficult
4	Learning attitude of students in the subject	Very poor	A	B	C	D	Very good
5	Consistency of student performance in the subject	Very consistent	A	B	C	D	Very inconsistent
6	Contact hours of lecture classes of the subject	Too long	A	B	C	D	Insufficient
7	Contact hours of tutorial classes of the subject	Insufficient	A	B	C	D	Too long
8	Contact hours of laboratory/ practical classes of the subject	Too long	A	B	C	D	Insufficient
9	Usefulness of tutorial classes	Very useful	A	B	C	D	Very unhelpful

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10	Coordination among subject lecturers teaching the same subject	Too much	A	B	C	D	Very insufficient

11	Are you confident in teaching the subject ?	Not confident	A	B	C	Very confident

12   Please state your preparation work time for the subject

[   ] hr/wk

13   Please state the time you spent on marking the assignments/ coursework of the subject

[   ] hr/wk

Teaching methodology :

14   Volume & content of the standard lecture notes used are

A	B	C	D	E
Too much	About right	Insufficient	No idea	Not applicable

15   Do you think the adoption of standard lecture notes is good for teaching and learning

Excellent	A	B	C	D	Even worse

16   Do you follow the standard lecture notes in delivering the lectures ?

A	B	C	D	E
Not at all	Treat it as reference	To some extent	Very much	Not applicable

17   What teaching aids do you use in lectures/tutorials ? Please state the percentage of contact hours in using these aids *(Total of 100%)*

A [ ]	B [ ]	C [ ]	D [ ]	E [ ]
Computer assisted	Overhead projector	Video/film/ slides	Internet/ web-sites	None

18	Do you let students ask questions in lectures ?	Very often	A	B	C	D	Not allowed

19   If you have the choice, would you like to continue teaching the subject next year ?

A	B
Yes	No

20   Please state other comments on the subject : _____

_____

(B) Comment on Course(s)

(i) Course title : _____ (FT) (Yr. 1 / 2 / 3)*

21	Do you think the course is difficult to the students ?	Very easy	[A]	[B]	[C]	[D]	Very difficult
22	What is the English proficiency of majority of the students ?	Very poor	[A]	[B]	[C]	[D]	Very good
23	Are the subjects integrated horizontally in the course curriculum ?	Very well	[A]	[B]	[C]	[D]	Very poorly
24	Are the subjects integrated vertically in the course curriculum ?	Very poorly	[A]	[B]	[C]	[D]	Very well
25	Does the course curriculum meet the aims and objectives of the course ?	Well met	[A]	[B]	[C]	[D]	Not at all
26	Does the course curriculum meet the demand/expectations of the industry/profession ?	Not at all	[A]	[B]	[C]	[D]	Well met
27	Does the current course administration/management promote the quality of the course ?	Very much	[A]	[B]	[C]	[D]	Not at all
28	Is the current course administration/management efficient and effective ?	Not at all	[A]	[B]	[C]	[D]	Very much

29 What is your view on the quality of the course ?

[A] Excellent   [B] Good   [C] Needs improvement   [D] Poor   [E] No idea

30 Does the current course administration/management provide the 'quality assurance' to the course ?

[A] Excellent   [B] Good   [C] Poor   [D] No idea

[E] Needs change / improvement

Please state the details of change/improvement :

_____

_____

31 Please state other comments on the course : _____

(C) Comment on IT Teaching :

32   Do you support the use of IT in teaching   [A]   [B]
                                                                        Yes   No

Computer proficiency - Are you familiar with the application of the following :

No.	Question		A	B	C	D	
33	MS Office	Very familiar	A	B	C	D	No knowledge
34	Visual Basic	No knowledge	A	B	C	D	Very familiar
35	Netscape/Internet Explorer	Very familiar	A	B	C	D	No knowledge
36	Do you expect difficulty to prepare lecture notes in IT approach ?	Very easy	A	B	C	D	Very difficult
			E — No idea				
37	Do you expect difficulty to prepare tutorial and laboratory sheet in IT approach ?	Very easy	A	B	C	D	Very difficult
			E — No idea				
38	Do you think the preparation work in IT approach would be time-consuming ?	Very time consuming	A	B	C	D	Not at all
39	Do you anticipate the use of IT in teaching will cause problems in course administration/management ?	Very likely	A	B	C	D	Very unlikely
40	Do you think the use of IT in teaching would improve the quality of the course in teaching and learning ?	Very much	A	B	C	D	Even worse
			E — No idea				

41   Other comments : _____

_____

_____

(D) Comment on ISO9000 Quality Management System :

No.	Question		A	B	C	D	
42	Are you familiar with ISO9000 System ?	Very familiar	A	B	C	D	Not at all
43	Do you support implementing ISO9000 quality system in educational organization ?		A (Yes)	B (No)	C (No idea)		
44	Do you support implementing ISO9000 quality system in the construction industry in Hong Kong ?		A (Yes)	B (No)	C (No idea)		
45	Do you believe implementing ISO9000 would improve the quality of teaching and learning ?	Very strongly	A	B	C	D	Not at all
			E — No idea				

If ISO9000 quality system is implemented in our organization,

No.	Question						
46	do you anticipate an increase in the amount of paper work ?	Reduced	[A]	[B]	[C]		increase a lot
			[D] No change		[E] No idea		
47	do you anticipate improvement in efficiency of administrative performance ?	Very much	[A]	[B]	[C]	[D]	Not at all
			[E] No idea				
48	do you anticipate improvement in quality assurance of the course(s) ?	Even worse	[A]	[B]	[C]	[D]	Very much
49	do you believe that ISO9000 certification will enhance the reputation of IVE ?	Very much	[A]	[B]	[C]	[D]	Not at all

50   Other comments on ISO9000 quality system on 'course quality and management' : _____

_____

(E)   General comment :

No.	Question						
51	Your work load on teaching is	Very light	[A]	[B]	[C]	[D]	Very heavy
52	Your work load on administration is	Very light	[A]	[B]	[C]	[D]	Very heavy
53	Computer facilities provided is	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
54	Support services provided is	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
55	Support in quality teaching from management	Very adequate	[A]	[B]	[C]	[D]	Very inadequate
56	Cooperation of staff with students is	Very poor	[A]	[B]	[C]	[D]	Very good
57	Cooperation among staff in the Department is	Very good	[A]	[B]	[C]	[D]	Very poor
58	Cooperation among staff in the College is	Very poor	[A]	[B]	[C]	[D]	Very good
59	Staff development opportunities & support is	Adequate			[A]	[B]	Inadequate
60	Research opportunities & support is	Adequate			[A]	[B]	Inadequate
61	Do you think adequate contact with the industry/profession would improve the quality of the course ?	Even worse	[A]	[B]	[C]	[D]	Very much
62	Do you think the current administrative/management system in the organisation is helpful to the quality assurance of the course ?	Very much	[A]	[B]	[C]	[D]	Not at all

63	Were you involved in relevant consultancy work in the last 12 months ?		A Yes	B No
64	Were you involved in approved outside work, *apart from evening teaching* in the last 12 months? *(State the nature of outside work if the answer 'yes')*		A No	B Yes
		Nature : _____		
65	Were or are you actively involved in the activities of related professional body(ies) ? *(If the answer is 'yes', please state the nature of involvement.)*		A Yes	B No
		Nature : _____ _____ _____		

66   Which topic(s) would you like to emphasize or expand when reviewing the course curriculum in future ?

_____

_____

67   Other comments :   _____

_____

68   Post in Department :   PL / SL / L / AL / Other

69   Total number of time-tabled student contact hours per week :   _____

☺

☺ ☺

End of Questionnaire

Thank you for your co-operation

295

Guideline for Interview and Group Discussion

Propose Topics of Discussion

1. Students

A. The Course

1. What's your view on the quality of the course?
   (with respect to standard, employability and acceptability.)

2. Do you think the course is appropriate to you?
   (Do you find the course difficult? In what way and to what extent?)

3. Is the course curriculum appropriate with respect to :-
   (a) Subjects and syllabus
   (b) Contact hours of   (i)   each subject
                         (ii)   students
                         (iii)   distribution of lecture/
                                   tutorial/laboratory time
   (c) Assignments and study time
   (d) Examination performance   (i)   examination paper
                                     (ii)   students' performance
                                     (iii)   marking of examination
                                             paper
   (e) Improvement to students' performance (examination)
   (f) Students communication ability

4. Is the workload (assignments/study) appropriate?

5. Is the examination too difficult?

B.   <u>Teaching Methodology</u>

1.   Which are the subjects you are most interested in?

2.   What are your strengths and weaknesses in the study of the course (eg. numerical/analytical subjects, descriptive/discussion subjects.)

3.   Discuss your view on the teaching approach/methodology of the staff.
What are the areas of improvement?

4.   Discuss the use of IT in teaching and the e-learning.

C.   <u>Employability and Future Career</u>

1.   Are you interested in this field?

2.   Discuss your future plan.

3.   Do you consider the course will give you a good support to your future career (employment/future study).

D.   <u>Management</u>

1.   Discuss your view on the management of the course.

2.   Discuss your view on the college policy and management relating to your study.
(eg. facilities in library, computing, class-room, time-tabling and student counseling etc.)

3.   Discuss the impact of the current and the proposed educational changes on the course.
How to cope with the social changes and development?

4.   Suggestions/recommendations on improving the quality of the course.

2. Staff

A. The Course

1. What's your view on the quality of the course?
   (With respect to standard, employability and acceptability.)

2. Is the course appropriate to the students, with respect to level and difficulty?

3. Is the course curriculum appropriate with respect to :-
   (a) Subjects and syllabus
   (b) Contact hours of (i)   each subject
                         (ii) students
                         (iii) distribution of lecture/
                               tutorial/laboratory time
   (c) Assignments and study
   (d) Examination performance (i)   examination paper
                                (ii) students' performance
                                (iii) marking of examination
                                      paper
   (e) Improvement to students' performance (examination)
   (f) Students communication ability
   (g) Strengths and weaknesses of the students
       (eg. numerical/analytical subjects – strong
            descriptive/discussion subjects – weak)

B. Teaching Methodology

1. Are you confident in teaching the subject(s)?

2. Are you interested in these subjects and would like to continue teaching them?

3. Discuss the workload on (i)   lecture preparation
                            (ii) marking of assignments
                            (iii) administrative duties

4. Discuss the use of IT in teaching and e-learning by students.
   (Could this improve the quality of the course?)

C. Management

    1. How to ensure the quality of the course?

    2. Do you think the current management system can provide the quality assurance?
(eg. the validation process, the course management/operation system.)
What are the areas of improvement?

    3. What's your view on the effect of staff workload on the quality of education, in particular to a course?

    4. Discuss the college policy and management on the quality of the course.
(Refer to support and facilities, library, computing, staff-development.)

    5. Discuss the impact of the current and the proposed educational changes on the course.
How to cope with the social changes and development?

    6. What is your suggestions/recommendations on improving the quality of the course?

3. Graduates

A. Employment/Further Study

    1. Are you in employment or in further study?

    2. Are you satisfied with your current employment and the work?

    3. Do you think you are competent to the work/employment?

    4. Discuss your career plan.

B. The Course

    1. What's your view on the quality of the course?
(With respect to standard, employability and acceptability.)

    2. Is the course supportive to your employment – duties and/or your further study.

3. Which area do you find insufficient for your work/further study? In what way this can be improved?

4. Is the practical content/training in the course sufficient for development of your work/duty?

C. Future trend/development of the course

1. Discuss the impact of the current and proposed educational changes on the course.
How to cope with the social changes and development?

2. What is your suggestions/recommendations on improving the quality of the course?

4. Employers

A. Employment

1. How do you find our graduates, working as your employees, with respect to employability, quality of performance, efficiency and knowledge?

2. Comparing with the graduates from other institutions, how do you rate our graduates?

B. The Course

1. Discuss the knowledge/experience, learned from the course, of the graduates in terms of their performance in your company.

2. Discuss your findings/comments on the course with reference to your employment of the graduates.

C. Comments/Suggestions

1. Describe the comments/suggestions on improving the course.

2. Is there sufficient graduate to meet the demand of the industry?

3. Discuss the changes that the course has to make to cope with the social/educational development and demand for the course.

Table D-1 :   <u>Participation in Group Discussions</u>

Group	Type of Participant	No. of Participants	No. of Invitations
1	Employers	2	6
	Graduates	3	6
	Staff of Institute Offering Further Study	1	4
2	Students	8	10
	Staff	2	3
	External Examiners	1	2
	Departmental Advisory Board Members	1	4

Table D-2 :   <u>Group Discussion Topics</u>

Topics to be discussed	Group 1 (Graduates + Employers)	Group 2 (Students + Staff)
Course Objectives	✓	✓
Quality of Input		✓
College Facilities		✓
Practical Training	✓	✓
Technical Skill/Knowledge	✓	✓
Communication Proficiency	✓	✓
Outcome Measures	✓	

Table D-3 :   Rate of Response to Questionnaires

Respondents		No. of Questionnaires Sent	No. of Questionnaires Returned	% Response Rate	
Students		290	278	95.8	
Academic staff		29	29	100	
Graduates	In Employment	132	45	34	Overall 50.7
	In Further Study	75	60	80	
Employers		120	46	38	

8th October, 1999

Dear Student,

Re:- **Research on Quality in Vocational Course for Higher Technicians**
(Questionnaire Survey)

I am writing to seek your help in responding to my questionnaire on quality of the course you are studying in the college. This questionnaire survey forms part of my research work which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed envelope. A response from you by 15th October, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only combined totals and general categories.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

12th October, 1999

Dear Graduate,

Re:- <u>Research on Quality in Vocational Course for Higher Technicians</u> <u>(Questionnaire Survey)</u>

Congratulations to your graduation from the Higher Diploma course.

I am writing to seek your help in responding to my questionnaire on quality of the course you have studied in the college. This questionnaire survey forms part of my research work which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed self-addressed and stamped envelope. A response from you by 22nd October, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only combined totals and general categories.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

12th October, 1999

Dear Employer,

Re:- <u>Research on Quality of Higher Diploma Courses in
Civil/Structural Engineering --- Questionnaire Survey)</u>

Many thanks for your kind support and interest in employing my graduates.

I am writing to seek your help in responding to my questionnaire on quality of the Higher Diploma courses from which your employee(s) is(are) graduated. This questionnaire survey forms part of my research work which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed self-addressed and stamped envelope. A response from you by 22nd October, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only combined totals and general categories.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

8th October, 1999

Dear Colleague,

Re:- <u>Research on Quality in Vocational Course for Higher Technicians (Questionnaire Survey)</u>

I am writing to seek your help in responding to my questionnaire on quality of the courses for higher technicians that you are teaching in the college. This questionnaire survey forms part of my research work which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed envelope. A response from you by 15th October, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only combined totals and general categories.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

18th September, 2000

Dear Student,

Re:- <u>Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Group discussion)</u>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to join the discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including staff, teachers of further study programme, employers, graduates, external examiners, the department's advisory board members and students like your goodself. The discussion will supplement the findings from other approaches of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 2, and the discussion will be held **at 2.30 p.m. on 18th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi** at

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear Graduate,

<div align="center">

Re:- <u>**Research on Quality of Higher Diploma Courses in**</u>
<u>**Civil/Structural Engineering --- (Group Discussion)**</u>

</div>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to join the discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including students, employers, teachers of further study programme, staff, external examiners, the department's advisory board members and graduates like your goodself. The discussion will supplement the findings from other approaches of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 1, and the discussion will be held **at 2.30 p.m. on 12th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi at**

<div align="center">

20 Tsing Yi Road
Tsing Yi, N.T.
Hong Kong.

</div>

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear Employer,

<div align="center">

Re:- <u>**Research on Quality of Higher Diploma Courses in**</u>
<u>**Civil/Structural Engineering --- (Group Discussion)**</u>

</div>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to join the discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including students, graduates, staff, teachers of further study programme, external examiners, the department's advisory board members and employers like your goodself. The discussion will supplement the findings from other approaches of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 1, and the discussion will be held **at 2.30 p.m. on 12th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi at**

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> **Tsing Yi, N.T.**
> **Hong Kong.**

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I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear Colleague,

Re:- <u>Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Group Discussion)</u>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to join the discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including students, teachers of further study programme, employers, graduates, external examiners, the department's advisory board members and teaching staff like your goodself. The discussion will supplement the findings from other approaches of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 2, and the discussion will be held **at 2.30 p.m. on 18th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi at**

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear External Examiner,

Re:- <u>Research on Quality of Higher Diploma Courses in Civil/Structural
Engineering --- (Group Discussion)</u>

I am doing a research work on quality in vocational education for higher technicians in Hong Kong. The research work is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

The Higher Diploma courses in Civil/Structural Engineering, for which you are the external examiner, are appropriate and have been chosen for the research work. Survey is the approach selected to obtain data for the study. Discussion is one of the three processes in the survey.

I am writing to invite you to join the discussion on the quality of the captioned courses. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including staff, employers, teachers of further study programme, graduates, students, the department's advisory board members and external examiners like your goodself. The discussion will supplement the findings from other processes of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 2, and the discussion will be held **at 2.30 p.m. on 18th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi,** at

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear Advisory Board Member,

Re:- **Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Group Discussion)**

I am doing a research work on quality in vocational education for higher technicians in Hong Kong. The research work is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

The Higher Diploma courses in Civil/Structural Engineering are found appropriate and are chosen for the research work. Survey is the approach selected to obtain data for the study. Discussion is one of the three processes in the survey.

I am writing to invite you to join the discussion on the quality of the captioned courses. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including staff, employers, teachers of further study programme, graduates, students, external examiners and the department's advisory board members like your goodself. The discussion will supplement the findings from other processes of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 2, and the discussion will be held at **2.30 p.m. on 18th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi, at**

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th September, 2000

Dear Dr. Ko,

Re:- **Research on Quality of Higher Diploma Courses in Civil/Structural
Engineering --- (Group Discussion)**

I am doing a research work on quality in vocational education for higher technicians in Hong Kong. The research work is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

The Higher Diploma courses in Civil/Structural Engineering are found appropriate and have been chosen for the research work. Survey is the approach selected to obtain data for the study. Discussion is one of the three processes in the survey.

As you are involved in the teaching of your degree programme, which has admitted a significant number of my graduates, I would like to hear your comment on my graduates' performance in your course as well as your opinion on the quality of the captioned course.

I am writing to invite you to join the discussion on the quality of the captioned courses. The objective of the meeting is to have an open forum type of discussion, probing into more in-depth comment, opinion and idea on the courses. The discussion will be participated by the principal stakeholders of the courses, including staff, employers, graduates, students, external examiners, the department's advisory board members and teachers of further study programme like your goodself. The discussion will supplement the findings from other processes of the research.

To achieve the best outcome of the discussion, it is good to have an efficient group of reasonable size, so that **the discussion would not take more than one and half hours.** It is planned to divide the participants into two groups. You will be in Group 1, and the discussion will be held at **2.30 p.m. on 12th October, 2000, in Room C352 of the Hong Kong Technical College, Tsing Yi,** at

> **20 Tsing Yi Roàd**
> **Tsing Yi, N.T.**
> **Hong Kong.**

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

I would be very grateful if you would confirm your participation before the end of this month.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

3rd February, 2001

Dear Student,

Re:- <u>Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Interview)</u>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to have a private discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have a detail discussion, probing into more in-depth comment, opinion and idea on the courses in a closer and private environment between your goodself and myself, so that the discussion can roam freely between us. The discussion will supplement the findings from other approaches of the research.

It is suggested to have the discussion **at 2.30 p.m. on 16th March, 2001, in Room C352 of the Hong Kong Technical College, Tsing Yi** at

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

3rd February, 2001

Dear Graduate,

Re:- **Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Interview)**

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to have a private discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have a detail discussion, probing into more in-depth comment, opinion and idea on the courses in a closer and private environment between your goodself and myself, so that the discussion can roam freely between us. The discussion will supplement the findings from other approaches of the research.

It is suggested to have the discussion **at 2.30 p.m. on 22nd March, 2001, in Room C352 of the Hong Kong Technical College, Tsing Yi** at

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

3rd February, 2001

Dear Employer,

<p style="text-align:center">Re:- <u>Research on Quality of Higher Diploma Courses in
Civil/Structural Engineering ---(Interview)</u></p>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to have a private discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have a detail discussion, probing into more in-depth comment, opinion and idea on the courses in a closer and private environment between your goodself and myself, so that the discussion can roam freely between us. The discussion will supplement the findings from other approaches of the research.

It is suggested to have the discussion **at 2.30 p.m. on 8th March, 2001, in Room C352 of the Hong Kong Technical College, Tsing Yi** at

> **20 Tsing Yi Road**
> **Tsing Yi, N.T.**
> **Hong Kong.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

3rd February, 2001

Dear Colleague,

Re:- **Research on Quality of Higher Diploma Courses in Civil/Structural Engineering --- (Interview)**

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to have a private discussion on the quality of the captioned courses. This discussion is a follow up programme of the questionnaire survey. The objective of the meeting is to have a detail discussion, probing into more in-depth comment, opinion and idea on the courses in a closer and private environment between your goodself and myself, so that the discussion can roam freely between us. The discussion will supplement the findings from other approaches of the research.

It is suggested to have the discussion **at 2.30 p.m. on 28th March, 2001, in Room C352.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case, and final reports will include only anonymous descriptions of issues and aspects raised and discussed.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

18th March, 1999

Dear Student,

<div align="center">

Re:- <u>**Research on Quality in Vocational Course for Higher Technicians**</u>
<u>**(Pilot Study of Questionnaire)**</u>

</div>

I am writing to seek your help in participating in the pilot study of a questionnaire on the quality of the course you are studying in the college. The pilot study is to test the validity and practicality of the questionnaire. It is an important process to the success of the questionnaire survey which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire (Pilot Study) and make comment on the questions of the questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed envelope. A response from you by 30th March, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

23rd April, 1999

Dear Colleague,

Re:- Research on Quality in Vocational Course for Higher Technicians (Pilot Study of Questionnaire)

I am writing to seek your help in participating in the pilot study of a questionnaire on the quality of the Higher Diploma courses you are teaching in the college. The pilot study is to test the validity and practicality of the questionnaire. It is an important process to the success of the questionnaire survey which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire (Pilot Study) and make comment on the questions of the questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed envelope. A response from you by 12th May, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

3rd May, 1999

Dear Employer,

Re:- <u>Research on Quality in Vocational Course for Higher Technicians
(Pilot Study of Questionnaire)</u>

I am writing to seek your help in participating in the pilot study of a questionnaire on the quality of the Higher Diploma courses in Civil/Structural Engineering. The pilot study is to test the validity and practicality of the questionnaire. It is an important process to the success of the questionnaire survey which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire (Pilot Study) and make comment on the questions of the questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed self-addressed and stamped envelope. A response from you by 18th May, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

23rd April, 1999

Dear Graduate,

Re:- **Research on Quality in Vocational Course for Higher Technicians**
(Pilot Study of Questionnaire)

Congratulations on your graduation.

I am writing to seek your help in participating in the pilot study of a questionnaire on the quality of the course from which you are graduated. The pilot study is to test the validity and practicality of the questionnaire. It is an important process to the success of the questionnaire survey which is being done to fulfill the requirements for completing my doctoral studies (Ed.D) at the University of Durham, U.K.

I would be very grateful if you would complete the attached questionnaire (Pilot Study) and make comment on the questions of the questionnaire. **It should not take more than 15 minutes** to do so. When you have finished, please send it back to me in the enclosed self-addressed and stamped envelope. A response from you by 12th May, 1999 will be greatly appreciated.

Please be assured that all information provided by you will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to hearing from you.

K.S. Law
Researcher

25th September, 2000

Dear Colleague,

Re:- **Research on Quality of Higher Diploma Courses in Civil/Structural Engineering----(Pilot Interview)**

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to participate in the **pilot interview** on the quality of the captioned courses. The pilot study is to check the validity of the questions to be raised during the interview and to gain practice in asking questions and recording the responses. The pilot test is an important exercise to the success of the interview and group discussion which will be held after this pilot study.

It is suggested to have the test **at 2.30 p.m. on 3rd October, 2000, in Room C352.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

3rd October, 2000

Dear Student,

Re:- <u>Research on Quality of Higher Diploma Courses in
Civil/Structural Engineering----(Pilot Interview)</u>

Many thanks for your kind support and response to my questionnaire.

I am writing to invite you to participate in the **pilot interview** on the quality of the captioned courses. The pilot study is to check the validity of the questions to be raised during the interview and to gain practice in asking questions and recording the responses. The pilot test is an important exercise to the success of the interview and group discussion which will be held after this pilot study.

It is suggested to have the test **at 2.30 p.m. on 9th October, 2000, in Room C352.**

You are welcome to suggest an alternative time and venue, that you may find more convenient to you.

Please be assured that all information discussed will only be used for academic purposes. You can also be sure of complete confidentiality. Your name will never be used in any case.

Should you have any questions or comments, please call me at 90901378.

Once again, thank you for your help and I look forward to meeting you in the discussion meeting.

K.S. Law
Researcher

Table F-1 : Course Curriculum and Assessment Schedule – Year 1

UNIT	Student Timetable hours/week						Form of Assessment Weighting		Unit Value (N$_i$)	Unit Weighting Factor (W$_i$)	Unit Weighted Value (N$_i$W$_i$)	Serviced by other dept.
	Term 1			Term 2			Coursework	Exam.				
	Lect.	Tut.	Lab.	Lect.	Tut.	Lab.						
Mathematics I	2	1/2	0	2	1/2	0	0.30	0.70	1.25	0.80	1.00	CM
English & Communication	0	1	1	0	1	1	1.00	-	1.00	1.00	1.00	ENG
Introduction to Computing	1	1	0	1	1	0	0.40	0.60	1.00	1.00	1.00	CM
Engineering Materials	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	MF
Engineering Surveying I	1	1/4	3/4	1	1/4	3/4	0.40	0.60	1.00	1.00	1.00	
Fluid Mechanics I	1	2/4	2/4	1	2/4	2/4	0.30	0.70	1.00	1.00	1.00	
Structural Mechanics	1 1/2	1/2	2/4	1 1/2	1/2	2/4	0.30	0.70	1.25	1.00	1.25	
Civil Engineering Construction	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Engineering Drawing	0	0	4/2	0	0	4/2	1.00	-	1.00	1.00	1.00	
Introduction to Elect. & Mech. Engg.	1	1/2	2/4	1	1/2	2/4	0.30	0.70	1.00	1.00	1.00	ME & EE
Total (excluding Project)	9.50	4.75	6.75	9.50	4.75	6.75				*S.W.V.	10.75	
Project (3 weeks) 10 h/wk for 3 wks.							1.00	-	0.50	1.00	0.50	
Basic Industrial Training			8			8	1.00**					

* S.W.V = Stage Weighted Value = $\Sigma_i N_i W_i$

** Subject assessed on a pass/fail basis

Table F-2 : Course Curriculum and Assessment Schedule – Year 2

UNIT	Student Timetable hours/week						Form of Assessment Weighting		Unit Value (N$_i$)	Unit Weighting Factor (W$_i$)	Unit Weighted Value (N$_i$W$_i$)	Serviced by other dept.
	Term 1			Term 2			Coursework	Exam.				
	Lect.	Tut.	Lab.	Lect.	Tut.	Lab.						
Mathematics II	2	1/2	0	2	1/2	0	0.30	0.70	1.25	0.80	1.00	CM
English & Communication for Engg.	0	1	1	0	1	1	1.00	-	1.00	1.00	1.00	ENG
Engineering Surveying II	1	1/4	3/4	1	1/4	3/4	0.40	0.60	1.00	1.00	1.00	
Soil Mechanics & Engineering Geology	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Construction Management I	1	1/2	0	1	1/2	0	0.30	0.70	0.75	1.33	1.00	
Structural Analysis I	1	1/2	2/4	1	1/2	2/4	0.30	0.70	1.00	1.00	1.00	
Design of Structural Elements I	1	1/2	2/4	1	1/2	2/4	0.30	0.70	1.00	1.00	1.00	
Structural Detailing	0	1/2	4/2	0	1/2	4/2	1.00	-	1.25	1.00	1.25	
Construction Technology	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Elective (a)*	1	1/2	2/4	1	1/2	2/4	0.30	0.70	1.00	1.00	1.00	
Project (3 weeks) 10 h/wk for 3 wks.							1.00	-	0.50	1.00	0.50	
Total (excluding Project)	9.00	4.75	6.75	9.00	4.75	6.75				#S.W.V.	10.75	
Structural Engineering Industrial Training			8			8	1.00**					

Note: (a) The electives are:
    (i)   Highway Engineering
    (ii) Public Health & Environmental Engineering
    (iii) Fluid Mechanics II

*   Actual contact hour varies with individual unit.

**   Subject assessed on a pass/fail basis

\#   S.W.V = Stage Weighted Value = $\Sigma_i N_i W_i$

Table F-3 : Course Curriculum and Assessment Schedule – Year 3

UNIT	Student Timetable hours/week						Form of Assessment Weighting		Unit Value (N$_i$)	Unit Weighting Factor (W$_i$)	Unit Weighted Value (N$_i$W$_i$)	Serviced by other dept.
	Term 1			Term 2			Coursework	Exam.				
	Lect.	Tut.	Lab.	Lect.	Tut.	Lab.						
English & Communication for Construction	0	2	0	0	2	0	1.00	-	1.00	1.00	1.00	ENG
Structural Analysis II	1 1/2	1/2	2/4	1 1/2	1/2	2/4	0.30	0.70	1.25	1.00	1.25	
Design of Structural Elements II	1 1/2	1/2	2/4	1 1/2	1/2	2/4	0.30	0.70	1.25	1.00	1.25	
Foundation Engineering	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Construction Management II	1 1/2	1/2	0	1 1/2	1/2	0	0.30	0.70	1.00	1.00	1.00	
Computer-aided Drafting	0	0	4/2	0	0	4/2	1.00	-	1.00	1.00	1.00	
Temporary Works	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Concrete Technology	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Elective (a)*	1	1/4	3/4	1	1/4	3/4	0.30	0.70	1.00	1.00	1.00	
Project (9 weeks) 10 h/wk for 9 wks.							1.00	-	1.50	1.00	1.50	
Total (excluding Project)	8.50	4.50	5.50	8.50	4.50	5.50				#S.W.V.	11.00	

Note: (a) The electives are:
    (i)   Earthwork Engineering
    (ii) Rock Engineering
    (iii) Fluid Mechanics & Hydrology

*   Actual contact hour varies with individual unit.

\#   S.W.V = Stage Weighted Value = $\Sigma_i N_i W_i$

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Table F4:   Course Activity Components and their Duration

	Term 1	Induction	Lectures	Consolidation	Group Project	Industrial Training	Holidays
Year	Week No.	1	2 - 14	15	16 - 18	6 wks *	1.5 wks
one	Term 2	Lectures	Consolidation	Exams.			Holidays
	Week No.	19 - 23	33	34 - 36			6 wks

	Term 1	Lectures	Consolidation	Group Project	Industrial Training	Holidays
Year	Week No.	1 - 14	15	16 - 18	6 wks *	1.5 wks
two	Term 2	Lectures	Consolidation	Exams.		Summer Industrial Attachment
	Week No.	19 - 32	33	34 - 36		6 wks

	Term 1	Lectures	Consolidation	Individual Project	Holidays
Year	Week No.	1 - 13	14 - 15	9 wks #	1.5 wks
three	Term 2	Lectures	. Consolidation	Exams.	
	Week No.	19 - 31	32 - 33	34 - 36	

Notes

*   Industrial Training is spread throughout the academic year at 1-day per week.
#   Individual project having a duration of 9 weeks equivalent is spread throughout term 1, week 16 – 18 and term 2.

Table F-5 : Diagrammatic Representation of the Course Structure

Year 1

| Mathematics I | English and Communication | Engineering Drawing | Introduction to Computing | Engineering Surveying I | Engineering Materials | Introduction to Electrical and Mechanical Engineering | Structural Mechanics | Civil Engineering Construction | Fluid Mechanics I | Projects |

Year 2

| Mathematics II | English and Communication for Engineering | Engineering Surveying II | Structural Analysis I | Soil Mechanics & Engineering Geology | Construction Management I | Projects |

| Design of Structural Elements I | Construction Technology |

| Structural Detailing | Highway Engineering* | Fluid Mechanics II* | Public Health & Environmental Engineering* |

* Select one from the above

Year 3

| English and Communication for Construction | Computer-aided Drafting | Concrete Technology | Structural Analysis II | Foundation Engineering | Construction Management II | Projects |

| Design of Structural Elements II | Temporary Works |

| Rock Engineering* | Earthwork Engineering* | Fluid Mechanics & Hydrology* |

* Select one from the above

Legend : ▢ Elective Subject

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ANNUAL COURSE STATISTICS

Course Code   :

Course Title   :   **Higher Diploma Course**

1.   Admission Statistics

	No. of Applicants (1st choice)	No. of Applicants (2nd choice)	No. of Applicants (3rd choice)	No. of Applicants (other choice)	No. of Students Registered
HD Course Year 1	722	538	548	543	120

2.   Final Examination Statistics

Year	Registered	Officially Withdrawn	Non-completion	Sat	Passes (%) Distinction	Credit	Pass/ Progress	Failure (%) Re-assess	Repeat	Required to withdraw
1	120	15	5	100	0	0	76%	14%	0	10%

3.   Examination Statistics after the Supplementary Examination

Year	Registered	Officially Withdrawn	Non-completion	Sat	Passes (%) Distinction	Credit	Pass/ Progress	Failure (%) Repeat	Required to withdraw
1	120	15	5	100	0	0	84%	6%	10%

4.   Mark Range

Year	Distribution of Students UA ≤ 49	50 – 64	65 – 74	≥ 75	Average Marks	Total Number of Students
1 (UA)	24%	50%	26%	0	58%	100

Course Quality Analysis

The quality judgement of a course is carried out by the Course Team at the end of each academic year. The quality analysis and assessment of the Course and suggested actions are reported to APAC for their attention and comment.

The quality assessment for each unit (Unit Quality Grade) and for each stage of the Course (Year Quality Grade) are based on a scale of grades (A to E) which are defined as follows :

A Very good (many good features)

B Good (good features and no major shortcomings)

C Satisfactory (Shortcomings balanced by good features)

D Unsatisfactory (Some shortcomings in important areas)

E Poor (many shortcomings)

Unit Quality Grade

Objective Grade

This summative grade for each unit of the Course is based on the following evidences and information :

- Individual student and group performance in all formal assessments of the unit including coursework and relevant forms of assessments

- The associated examination statistics within the unit : average unit mark and the spread of scores

- Examination pass rate, reassess rate and failure rate in the unit

Subjective Grade

This summative grade for each unit of the Course is based on the views of students, staff, and the local industry :

- Feedback from individual students and/or student/class representatives through formal and informal contacts, student questionnaires, BoS meetings
- Feedback and views from graduates through questionnaires
- Feedback and views from individual unit lecturers
- Feedback and comments from external examiners
- Feedback and views from employers through surveys, industry representatives serving on DAB (Construction)

Overall Unit Quality Grade

The assignment of an overall Unit Quality Grade to a unit is based on its summative grades, namely the Objective and Subjective Grades, taking into account the departmental and college resources constraints, as well as teaching, course operation and management issues.

Year Quality Grade

Judgement on the quality of each year of the Course is based on :

- Quality Grades of all units for that year
- Examination Pass Rate
- Progression Rate
- BoS input

Course Quality Analysis Return

Department: _____

Course Code: _____

Course Leader(s): _____

Course Title: Higher Diploma Course   **Date:** _____

Summary of Annual Course Statistics (Including Quality Grade)

	Year 1			Year 2			Year 3		
Exam Pass Rate (%)	Quality Grade	Year 1 (%) Progression	Exam Pass Rate (%)	Quality Grade	Year 2 (%) Progression	Exam Pass Rate (%)	Quality Grade	Cohort (%) Progression

Cohort Prog'sion (Yr 2 Entry): _____

Category of action to be taken at Course level by Course Team

Unit Quality Grades

	Year 1				Year 2				Year 3		
Unit Title	Act'n	Sum'tive Grades Obj	Subj	Unit Title	Act'n	Sum'tive Grades Obj	Subj	Unit Title	Act'n	Sum'tive Grades Obj	Subj
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												

Category of action to be taken at Unit level by Course Team

COHORT PROGRESSION

COURSE	Higher Diploma Course
COURSE NO.	INTAKE YEAR

APPLICATIONS

PLANNED PLACES [   ]   TOTAL APPLICANTS [   ]   INTERVIEWED [   ]

OFFERS MADE   ROUND 1 [   ]   ROUND 2 [   ]   ROUND 3 [   ]

OFFERS ACCEPTED   ROUND 1 [   ]   ROUND 2 [   ]   ROUND 3 [   ]

YEAR 1

REPEATERS [   ] ▶   TOTAL ENROLLED AT NOV 1 [   ]

PASSED 1st TIME [   ] ▶ TOTAL DROPOUTS [   ]

PASSED RESIT [   ]

TOTAL PASSES [   ] ▶ TOTAL FAILS [   ]

YEAR1 PROG'SION [   ]   ASSESSMENT PASS RATE [   ] ▶ FAILURE RATE [   ]

YEAR 2

▶ RETIREMENTS [   ]

DIRECT ENTRY [   ] ▶   TOTAL ENROLLED AT NOV 1 [   ]

REPEATERS [   ] ▶   ▶ D.E. DROPOUTS [   ]

PASSED 1st TIME [   ] ▶ TOTAL DROPOUTS [   ]

PASSED RESIT [   ] ▶ D.E. FAILURES [   ]

TOTAL PASSES [   ] ▶ TOTAL FAILS [   ]

YEAR2 PROG'SION [   ]   ASSESSMENT PASS RATE [   ] ▶ FAILURE RATE [   ]

˙ YEAR 3

▶ RETIREMENTS [   ]

DIRECT ENTRY [   ] ▶   TOTAL ENROLLED AT NOV 1 [   ]

REPEATERS [   ] ▶   ▶ D.E. DROPOUTS [   ]

PASSED 1st TIME [   ] ▶ TOTAL DROPOUTS [   ]

CREDITS [   ]   PASSED RESIT [   ] ▶ D.E. FAILURES [   ]

DISTINCTIONS [   ]   TOTAL PASSES [   ] ▶ TOTAL FAILS [   ]

YEAR3 PROG'SION [   ]   ASSESSMENT PASS RATE [   ] ▶ FAILURE RATE [   ]

PROGRESSION

YEAR 1 ENTRY COHORT PROG RATE [   ]

YEAR 2 ENTRY COHORT PROG RATE [   ]

YEAR 3 ENTRY COHORT PROG RATE [   ]