

Science and Mathematics Education Centre

**International Education – Career Pathways in Science and
Engineering**

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**This thesis is presented for the Degree of
Doctor of Philosophy
of
Curtin University of Technology**

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DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

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ABSTRACT

This study examines the relationship between international fee-paying students and career pathways through courses of study in Science and Engineering. International education is a significant endeavour in Australia in terms of any measure (students, dollars, associated employment). Over the last two decades it has grown in scope, beyond international fee-paying students, so that it now crosses all sectors of education and training (schools, vocational education and training, and higher education). Australian institutions have expanded their enrolment offshore and engaged in a variety of joint venture activities to capitalise on this surge of interest.

The study examined international fee-paying students and career pathways shortly after the Organisation of Economic Co-operation and Development (OECD) conducted two major studies in 2004 into career education and transnational education amongst member countries. The links between course and career intentions were investigated by focusing on the subject fields of Science and Engineering. The term *career pathway* is used as a metaphor to describe the way students move through the Australian education and training system, with such movements possibly occurring through sequential levels or by sectors.

A literature review was conducted initially, and a mixed research methodology (involving both quantitative and qualitative approaches) was adopted for the study. A survey instrument was used with a sample of 110 international fee-paying students drawn from students studying Science and/or Engineering at nine institutions across sectors of Australian education and training, then a further sample of 22 students was interviewed in order to gain an understanding of the underlying reasons for students making the decisions, in relation to courses and careers that they do. These samples provide the opportunity to evaluate international students' understandings of the Australian education and training system, especially the entry procedures into Science and/or Engineering courses. As part of the methodology the preliminary results were shared with the institutions involved to gain their input.

Major findings were that 68 percent of the sample did not have career preparation or advice before coming to Australia; 52 percent of the sample was able to explain the term 'credit-transfer'; 53 percent of the sample had researched the recognition of their course in their home country, and careers advice was sought by 58 percent of the sample whilst studying in Australia.

Resulting from the study are a number of recommendations for major stakeholders associated with international education (Australian Educational International, the Graduate Careers Council of Australia, government policy makers, institutions, the related professional bodies in the fields of Science and Engineering, and international fee-paying students). The findings of this study have implications for the way in which careers services are provided to international fee-paying students at Australian institutions.

The outcome of this study is presented in two volumes. Volume One contains the body of the thesis in 6 Chapters. Volume Two (on disk) includes the associated documents of this study, presented in twelve Appendices.

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Tasmanian teachers reinforced my view that further research into career education in Australia, and particularly career pathways was warranted. At the time, career education appeared to be overshadowed by developments in vocational education and training in schools.

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GLOSSARY

- **Articulation**

Outline of formal arrangements recognising the varying entry and exit points in education and training, and maximising the opportunity for credit transfer.
- **Careers**

Usually refers to paid employment but more recently the term has become broader to encompass periods of paid and unpaid work interspersed with education and training and lifelong experiences. Careers in this study is intended to relate to a job or occupation or profession that a student might want to pursue at the end point of their formal academic studies.
- **Career pathways**

Describes possible routes from compulsory schooling into post – compulsory education, training, and employment destinations. The term can refer to a student progressing along routes in a number of different ways. Keating (1994) describes two distinct types of situations: “multi-tracked systems”; and those that form a “seamless web” p. 28.
- **Credit-transfer**

Assesses a subject or course a student has studied in relation to a proposed course of study. Credit is usually established exempting a student from parts of the future course or they can receive advanced standing.
- **ELICOS**

An acronym meaning ‘English language intensive courses for overseas students’. These courses are specifically designed to assist overseas students to develop their English language skills and are usually the basis of pursuing further study.

- **Entry points**
The level and point of study commenced by a student.
- **Field of Study / Field of Education**
A classification of a course of study with similar vocational emphasis, as defined by Australian Education International (AEI), a division of the Department of Education, Science and Training.
- **Foundation Studies**
A preliminary course of study leading on to undergraduate studies. In many cases it substitutes for Grade 11 and 12 studies.
- **International fee-paying students**
Students who require a student visa to study lawfully in Australia. Usually their course of study is longer than three months. New Zealand citizens do not usually require such a visa. The students' study load is full-time and limited to on-campus modes of delivery.
- **Offshore**
Refers to programs conducted outside Australia.
- **Onshore**
Refers to programs offered within Australia.
- **Overseas student**
A student studying inside or outside Australia with a country of origin other than Australia.
- **Progression**
Moving from one level of education and training to the next.
- **Provider**
An institution providing education and training courses.
- **Science and Engineering fields**
Science is defined by AEI as a course of study in Anatomy, Biochemistry, Biology, Botany, Chemistry, Computer Science, Geology, Home Economics, Human Movements, Information

Systems, Mathematics, Microbiology, Nautical Science, Physics, Sports Science, Statistics, and Zoology.

Engineering is defined by AEI as a course of study in Aeronautical, Chemical, Civil, Electrical, Electronic, Industrial, Marine and Mechanical Engineering. Also included are Cartography, Metallurgy and Surveying.

- Sector
Level of study i.e. school, ELICOS, undergraduate (UG) university, postgraduate (PG) university, and vocational education and training (VET).
- Sister School
Relationships between schools and educational institutions, that usually involves cultural ties and reciprocal exchange visits.
- Twinning
In a generic sense twinning covers all forms of joint delivery of education and training. In a more specific sense it covers organisational arrangements between academic institutions which allow students to commence courses of study in one institution and transfer with academic credits to another institution.
- Visa subclass
Is a class of temporary visa given to students by the Department of Immigration, Multicultural and Indigenous Affairs for various levels of study. The following subclasses typically apply: 570 ELICOS; 571 School; 572 VET; 573 Undergraduate University and 574 Postgraduate University.
- Vocational Education and Training (VET)
A sector of education that typically awards Certificates I-IV and Diplomas and Advanced Diplomas, within the Australian Qualification Framework (AQF).

ACRONYMS

AACC	Australian Association of Career Counsellors
ABS	Australian Bureau of Statistics
AEC	Australian Education Centre
AEF	Asia Education Foundation
AEI	Australian Education International
AIEF	Australian International Education Foundation
AIEPB	Affiliation of International Education Peak Bodies
APAIS	Australian Public Affairs Information Service
AQF	Australian Qualification Framework
ASC	Australian Computer Society
AusAID	Australian Agency for International Development
AVCC	Australian Vice Chancellors' Committee
AVCts	Australian Vocational Certificate Training System
CBT	Competency Based Training
CDES	Career Development and Employment Service
CEAV	Career Education Association of Victoria
CESCO	Conference of Education Systems Chief Executive Officers

CICA	Career Industry Council of Australia
CRICOS	Commonwealth Register of Institutions and Courses for Overseas Students
CTE	Career and Technical Education
CUPSA	Curtin University Postgraduate Students' Association
CV	Curriculum Vitae
DEET	Department of Employment, Education, Training
DEETYA	Department of Employment, Education, Training & Youth Affairs
DEST	Department of Education, Science & Training
DIMIA	Department of Immigration, Multicultural and Indigenous Affairs
EA	Engineers Australia
EFTSU	Equivalent Full Time Student Unit
ELICOS	English Language Intensive Courses for Overseas Students
ERIC	Educational Resources Information Centre
ESL	English as a Second Language
ESOS	Educational Services for Overseas Students
GCCA	Graduate Careers Council of Australia
GNVQ	General National Vocational Qualification

IB	International Baccalaureate
IChemE	Institute of Chemical Engineering
ICT	Information and Communication Technologies
IDP	International Development Program
IEAA	International Education Association of Australia
IEAust	Institute of Engineers, Australia
IEE	Institute of Electrical Engineering
IELTS	International English Language Testing System
IIE	Institute of International Education
ISANA	International Student Advisor's Network Australia
ISE	International Secondary English
ISP	Internet Service Provider
IT	Informational Technology
LOTE	Languages Other Than English
MCEETYA	Ministerial Council for Education, Employment, Training and Youth Affairs
MONSEAC	Monash Student Employment and Career Service (now known as Monash Careers and Employment)
NCVER	National Centre for Vocational Education and Research

NLC	National Liaison Committee for International Students in Australia
OASIS	Online Access to Student Information Services
OECD	Organisation for Economic Co-operation and Development
PCO	Principal Curriculum Officer
PG	Postgraduate
PR	Permanent Residence
PRC	Peoples' Republic of China
PRISMS	Provider Registration and International Students Management System
QUT	Queensland University of Technology
RCC	Recognition of Current Competencies
RPL	Recognition of Prior Learning
RTO	Registered Training Organisation
SACE	South Australian Certificate of Education
SAR	Special Administrative Region – Hong Kong
SARS	Severe Acute Respiratory Syndrome
SSABSA	Senior Secondary Assessment Board of South Australia
SE	Science and Engineering

SMEC	Science and Mathematics Education Centre
SPSS	Statistical Package for the Social Sciences
TAFE	Technical and Further Education
TE	Tertiary Entrance Score
TRaCS	Training Research and Consultancy Services (a section of ISANA)
TVET	Technical and Vocational Education and Training
VCE	Victorian Certificate of Education
VET	Vocational Education and Training
UEC	Unified Examination Certificate (Malaysia)
UG	Undergraduate
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNSW	University of New South Wales
USA	United States of America
Utas	University of Tasmania
UWA	University of Western Australia

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Chapter 1

INTRODUCTION AND OVERVIEW

1.1 BACKGROUND TO THIS STUDY

International students studying in Australia represent a significant economic activity in terms of the numbers of enrolments involved (322,776 in 2004), the number of people employed in this industry (50,000) (Hamilton, 1998, p. 5), the dollar value to the economy (\$A5.2 Billion in 2004) (Vanstone, 2005b, p. 1) and the multiplier effects on other parts of the economy. International students represent almost one in every five enrolments in the Australian education and training system Sawyer (2003a) and thereby have a potential to contribute to a greater understanding between different ethnic groups. This research study is intended to further our knowledge of one particular aspect of this activity: international fee-paying students and their career pathways. The manner in which students both enter and depart from the Australian education and training system is considered and the link between the reasons why students enrol and their career intention is explored in relation to those students studying in the fields of Science and Engineering. The metaphor *career pathway* is used to describe such movements through the education and training system.

The Organisation for Economic Cooperation and Development (OECD) has attempted to identify the movement of higher education students between 37 countries (both member countries and some non-member countries). In 2002 1,898,250 students were involved in gaining their education outside their own country (OECD, 2004b). The major source continents were Asia (45 %), Europe (30 %) and Africa (11 %). The main source countries were the People's Republic of China (9.6 %), India (4.6 %), South Korea (4.4 %) and Japan (3.3 %). The major receiving countries were the United States of America (31 %), the United Kingdom

(12 %), Germany (11.5 %), Australia (9.5 %) and France (8.7 %). The data is based on the OECD indicator C3 and relates to head counts of students. The flow of students occurs for a number of reasons including language acquisition (English, German and French in particular), cultural experiences and research opportunities in the receiving country and may relate to a lack of capacity in the education system of the source country. The geographic location of Australia on the edge of the largest sending region has assisted the rapid development of the international fee-paying student into its institutions. Associated with the movement is a number of acculturation issues arising from the student joining the host culture and being able to operate effectively in the host country's education system.

The receipt of international students to Australia is no longer confined to students studying in Australia. A number of Australian institutions have expanded offshore to offer Australian education and training programs in the student's home country. Nearly 25 percent of Australia's international fee-paying students study outside Australia. Some of these programs are conducted by an Australian university registered in the host country, for example, the Curtin University of Technology Sarawak campus in Malaysia (Curtin Malaysia Sdn Bhd, 2005). This development is not restricted to the higher education sector with Australian vocational education and training (VET) providers and also the school sector involved. There has been a marked development of such transnational arrangements though in many cases, the intention of the Australian provider is to conduct part of a course overseas, with the student transferring at some point to complete their qualification in Australia. This has given rise to an array of arrangements, particularly the twinning between offshore and onshore institutions to provide a course of study. Further to this are issues involving articulation arrangements between providers both in Australia and offshore, and the recognition of the student's previous course of study through procedures such as advance standing. The movement of students between the various levels and sectors of study (school, VET, undergraduate and postgraduate) has been an increasing feature of the Australian education and training system

over the last two decades. Mouhtouris (2005) quoting research by Harris, Sumner and Rainey (2005) has reported on this.

1.2 WHY EXAMINE INTERNATIONAL EDUCATION AND CAREER PATHWAYS?

This study examines how students navigate through the Australian education and training system. In doing this it considers the movement of international fee-paying students from one level, or sector, of education and training to another, whilst one aspect of increasing importance to how students enter the education and training system is the movement of students from offshore to onshore through twinning programs. Students also move within institutions, especially from English language programs into undergraduate programs. The most common sector pathway is from English language courses designed for overseas students or ELICOS to higher education undergraduate programs (Australian Education International, 2005, p. 2). Career pathway can refer to a student progressing along routes both “vertically and horizontally” (Keating, 1994, p. 28). Others, including Robinson have used “pathway patterns [to] convey important information about changes in patterns of study, and associations with student characteristics” (2004, p. 1).

Australian institutions are operating in a very competitive market for students against institutions from other English speaking countries such as Canada, the United States of America (USA), the United Kingdom (UK), New Zealand and more recently, Malaysia and Singapore. The appropriateness of the notion of Australian career pathways to international students is considered in the study. Given that the students in many of Australia’s major markets lack familiarity with the elements of career pathways, the loss of potential students by its attempts to explain the structure and interplay of the Australian education and training system is also explored.

The uses of career pathways are examined as a possible strategy to assist Australia in its endeavours to be a centre for international education for both onshore and offshore programs. To test the appropriateness of this concept to international fee-paying students, their career intentions are considered in relation to their enrolment in a course of study in Science and/or Engineering. The Science and Engineering fields accounted for 17 percent of the total international student population in Australia in 2000 (Australian Education International, 2001b). The Science field (as defined by Australian Education International) includes the enrolment subgroups of, in order of significance, Computer Science, Life Science, Science, Physical Science and Mathematics. The terminology of *broad field of study* has since been changed to *field of education* and Computer Science and Information Technology has become a separate field (see Appendix 8 for clarification).

Figure 1.2-1 outlines the typical pathways used by international fee-paying students into institutions and courses of study relating to Australian education and training. This figure highlights the variety of career paths both vertically and horizontally which students can take. For example, the common pathways taken by students are Entry 3 (foundation studies into university), Entry 7 (ELICOS into university undergraduate programs), Entry 10 (university undergraduate into university postgraduate programs) and whilst Entry 5 (VET and TAFE into university) is commonly portrayed as a one-way movement, there are a number of students who also move in the opposite direction.

There has been considerable interest amongst OECD countries in both transnational education and career education, with major reports published on these areas in 2004. This study is a timely exploration of the interplay of these fields of education. It is assumed that a successful academic outcome for an international student in Australia is increased the longer they participate in the Australian education and training system. This assumption is tested in this study.

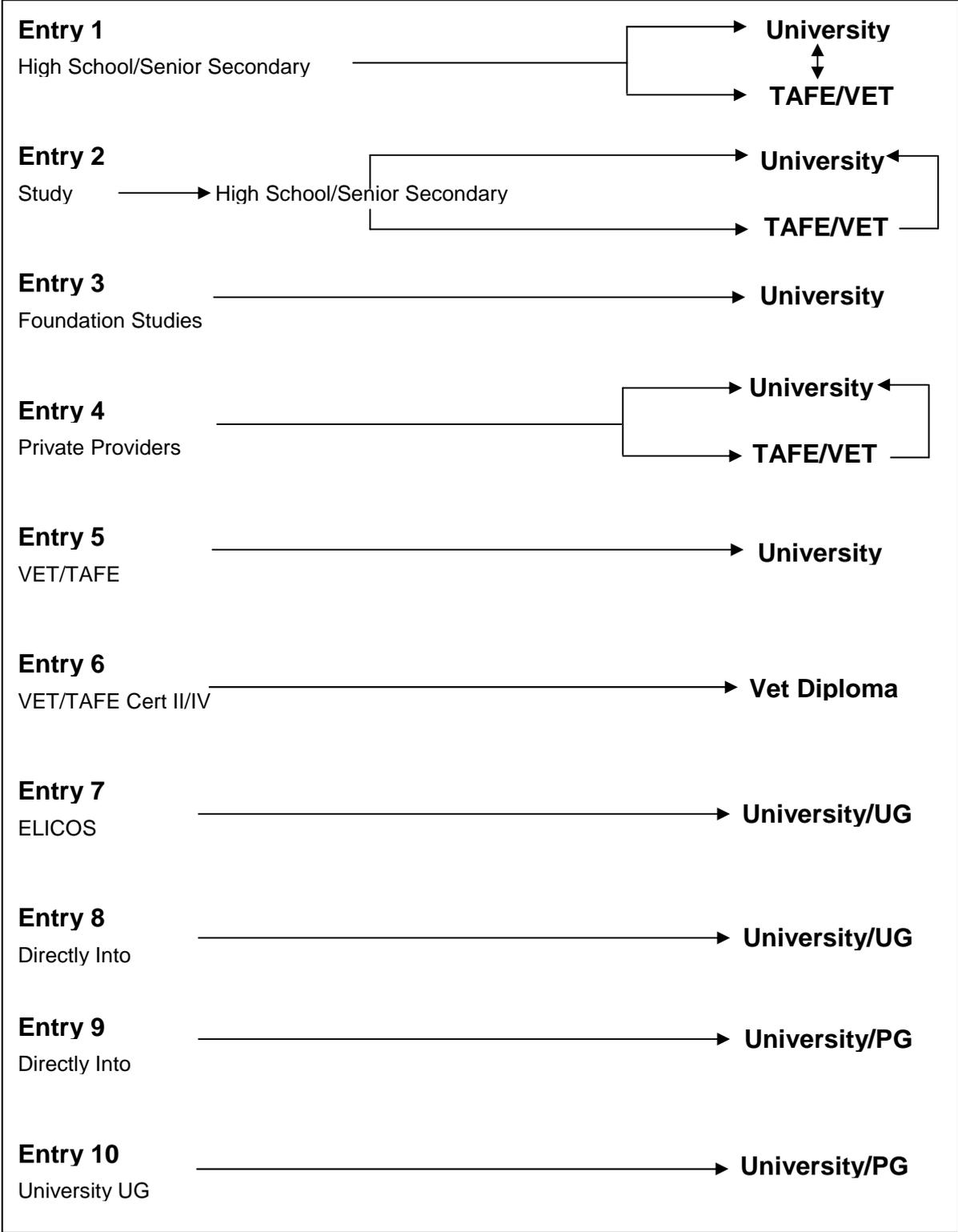


Figure 1.2—1 Career Pathways by Entry Point into Australian Education Training

1.3 CONTEXT OF THIS STUDY

1.3.1 WHAT IS THIS STUDY ABOUT?

This study examines a cohort of international fee-paying students in a defined course of study over time (2003-5). The courses of study involved are those undertaken by international fee-paying students in Science and/or Engineering. The study assesses how such a sample of students move through the sectors of the education and training system and what factors may contribute to the successful completion of courses, or otherwise. It identifies and considers the assumptions that international students make in selecting to undertake a Science and/or Engineering course in coming to study in Australia and also considers the level of career preparation and the appropriateness of the course of study with stated career intention. The participation of international fee-paying students studying courses in Science and/or Engineering is considered in comparison to other fields of study.

1.3.2 WHAT IS THIS STUDY NOT ABOUT?

This study is not necessarily a survey of factors impeding international students studying successfully in Australia. Whilst aspects of English language acquisition are considered, this study does not focus exclusively on how this impacts on academic success. The economic contributions of international students to Australia are not central to this study, others such as Jolley (1997) have covered this in considerable detail. Further, this study does not examine the development of offshore programs and their impact on the numbers of international students attending campuses onshore in Australia. Such students lie outside the definition of international fee-paying students as they do not require student visas to study in Australia. This study is not an analysis about the effectiveness of how institutions market their courses for international fee-paying students, although the results of the study will be shared with institutions. Nor is it one of evaluating client satisfaction: with the potential to take up an advocacy role on behalf of international students seeking possible redress to perceived course and or institution grievances. This is not a

study about the recognition processes of overseas qualifications. It is not a study of “talent flows” (“brain drain”) and the intersection of career development with an overseas experience. Others (Inkson & Carr, 2004, p. 23) have given this aspect their close attention.

1.4 OBJECTIVES OF THIS STUDY

- To examine what factors impact on the successful completion of a course for international fee-paying students in Science and/or Engineering and how or why these occur.
- To examine what a career pathway into Science and Engineering means for an international fee-paying student.
- To determine if course entry level procedures are appropriate in order to maximise students’ chances of successful course completion.
- To determine how successful international fee-paying students are in progressing through the various sectors of the Australian education and training system.

1.5 RESEARCH QUESTIONS

- What factors contribute to the success or otherwise of international students in their studies in Science and Engineering?
- Are there factors and decisions taken by students that determine success in studying a Science and/or Engineering pathway and are these different to other pathways?
- What do international fee-paying students understand about the Australian education and training system, particularly the entry procedures into Science and/or Engineering?
- What relationships are there between studying Science and Engineering courses and career intentions?

1.6 SUMMARY OF METHODOLOGY

1.6.1 SAMPLE SELECTION AND PREPARATORY GROUNDWORK

The sample consisted of 110 international students studying at nine institutions. The students were studying at institutions registered to enrol international fee-payers in the higher education, vocational education and training, and school sectors. Interviews were subsequently conducted with 20 percent of the respondents.

A literature survey was conducted focussing on the development of the international education industry in Australia, the regulatory environment that shaped its development and the economic significance of the industry. There was also an examination of relevant curriculum developments and the growth of an internationalisation of education. In addition, the concept of career pathways was researched and considered in relation to the entry points made by international fee-paying students into the Australian education and training system. The literature survey confirmed the concentration of existing research relating to international fee-paying students and their English language ability, along with the economic significance of the emerging industry. Limited research appears to have been conducted on tracking cohorts of students, assessing their entry point into the Australian education and training system, and the subsequent completion of their courses of study.

Both qualitative and quantitative methodologies were adopted. A participatory method of inquiry (Wadsworth, 1998) was also employed. To this end, presentations on this study were given at two international conferences in 2000 (Taipei, Taiwan) and in 2003 (East London, South Africa). Other international, national and local conferences were attended in order to further a dialogue with other interested colleagues. Support for this study was obtained from appropriate bodies such as, the National Liaison Council for Overseas Students (NLC). The NLC is the peak body in Australia representing international fee-paying students. A letter of

support was subsequently obtained from the National Convener. The Information Sheet (Appendix 1) accompanying the questionnaire that was sent to selected students indicated a statement to this effect. In addition, information about the project was organised by some state/territory branches of the NLC to coincide with the dissemination of questionnaires to institutions.

An examination was made of the population data of international fee-paying students and in particular the data relating to those students who studied courses in the Science and/or Engineering fields (Australian Education International, 2001b). Formal ethic committee clearances were sought for the dissemination of the questionnaire from Curtin University of Technology and the South Australian Department of Education, Training and Employment (this related to the four schools that participated in the study).

1.6.2 INSTRUMENTATION

The survey instrument (Appendix 1) was developed taking into account that English was not the first language of many of the respondents. The standard of English required for ELICOS courses or school courses is, by necessity, less than that expected for undergraduate courses. The design of the instrument focused on a 'tick a box' approach and minimised the inclusion of written statements. There are 40 items on the survey and typically most students would respond to 30 of these. A draft of the instrument was sent to the major professional bodies dealing with career outcomes for students studying Science and Engineering, namely: the Association of Professional Engineers, Scientists and Managers; the Institute of Engineers; the Australian Computer Society; the Australian Mathematical Society; the Australian Institute of Biology; the Australian Institute of Physics; the Australian Society of Microbiology and the Royal Australian Chemical Institute. These associations were asked to comment on the draft questionnaire and to give advice on which institutions to approach for the distribution of the questionnaires.

A trial of the survey was conducted with a small focus group to identify any issues that needed to be addressed, for example, clarity of the items, the design of the questionnaire, or both. The questionnaire was also distributed to some international student advisors (members of International Student Advisor's Network Australia – Tasmania) for comment, especially on the use of language in the questionnaire.

1.6.3 PROCEDURE

Fourteen education and training institutions registered on the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) were approached to participate in this study. Of these, seven responded positively. Subsequently, no completed questionnaires were received from one of the latter institutions. Another provider was the South Australian Department of Education, Training and Employment which encompassed the four schools that participated in this study.

Questionnaires were printed and sent to institutions in batch numbers with reply paid envelopes for dissemination to students. Conversations occurred with institutions about the desirable sample profile that should be achieved. One institution (Monash University) required the questionnaire to be distributed electronically. As a consequence a slightly amended questionnaire for Monash was developed.

1.6.4 DATA COLLECTION

In late 2003 the questionnaire was completed by 110 respondents from 23 countries studying at nine institutions. Respondents (in order of numbers) came from the People's Republic of China (PRC), Malaysia, Indonesia, Singapore, Hong Kong Special Administrative Region or SAR (a Special Administrative Region of the People's Republic of China but treated separately here because of data collection reasons), Thailand and India. Of this sample 63 were male and 47 female. An initial collation of

raw data was undertaken and entered into an Excel spreadsheet (Appendix 2).

In late 2004 interviews were conducted in person or by phone with 22 respondents (14 males and 8 females) representing 20 percent of the questionnaire sample. The interviewees were from 11 countries, 5 institutions and 4 sectors, and represented a variety of intended career outcomes. The interviews were based on a set of focus questions (Appendix 4).

1.6.5 DATA ANALYSIS AND QUALITY CONTROL

The questionnaire data was coded and then a cross-check of the accuracy and validity of data was undertaken. The Excel spreadsheet containing the raw data was entered into the Statistical Package for the Social Sciences (SPSS) statistical package. A further checking of the accuracy of frequency data entered was undertaken and corrections made, then a cross-tabulation of data was conducted and in particular chi-squared tests were used on the data to identify statistically significant associations.

The focus questions were used as the basis of questions put to the respondents in an interview. This follows what Morse describes as “grounded theory” (1998, pp. 63) where “process questions – experience over time or change” are used. Interviews were recorded on tape with the participant’s agreement and later transcribed. A copy of the record of the interview was emailed to the respondent for verification and corrections were made where appropriate (Appendix 10 and 12). The interviewing of students provided an opportunity to match current career intentions for this sample against that given in the questionnaires approximately ten months earlier. The data gained from this sample provided a possibility for assessing the factors and reasons why students made decisions in relation to their course of study. The results of the questionnaire and interviews were shared with the institutions involved. The feedback, from the institutions about the results was incorporated into this study. This

provided an opportunity to address what Guba and Lincoln (1989, p. 233) describe as “trustworthiness criteria” and “the authenticity criteria” in “fourth generation evaluation”. “...fourth generation evaluation is a process for doing evaluation that meets two conditions: It is organized by the claims, concerns, and issues of stakeholding audiences, and it utilizes the methodology of the constructivist paradigm” (p. 71).

1.7 SIGNIFICANCE OF THIS STUDY

This study breaks new ground by examining aspects of international education and career education. Individually, both areas have been the attention of major OECD investigations leading to reports published in 2004. Given the size of the international student enrolment in Australia (over 20% of total), this study charts new territory as it considers the potential impact of the interplay of international and domestic students alike in an education and training system. Through a survey instrument and interviews this study produces information which currently is not readily available. The sampling undertaken gives an insight into why students have come to Australia for further education and training. It provides us with information about the nature of their enrolment, course selection and their reasons for this, as well as, their intended pathway towards a possible career outcome. The information processed should be of use to the range of stakeholders involved in international education: government agencies, educational institutions, and students. Given the numbers of international fee-paying students in Australia this study has the potential to enhance the understanding of the nature of the intake, and the factors influencing their enrolment and their choice of course. There are implications for institutions that use the terminology career pathway, for those that enrol and counsel students about courses and careers, for those involved in teaching Science and/or Engineering courses and to those professional bodies that provide services or resources to international students.

This study comes at a time when issues have been raised about the interest level of local students in entering courses in Engineering (Vines, 2005, p. 63) and in Science (Australian Council of Deans of Science, 2001), and at a time when there is wider debate about the future of Science in education (The Save British Science Society, 2004). Some of this discussion relates to perceived skill shortages in industries associated with Science and Engineering. There is also the perceived view that international fee-paying students obtaining permanent residence (PR) in Australia are taking some of the positions not being filled by locals.

1.8 LIMITATION OF THIS STUDY

The relative scales of the international student population involved limit this study. In 2003, at the time of distributing the questionnaire there were over 303,000 international enrolments in this country and over 40,000 were studying in the Science and Engineering fields in the higher education and VET sectors alone. The response level across all sectors was variable. There was an interest in determining the success of students in Australian offshore programs and how well they did when they arrived onshore. However, the study did not attempt to track any such cohort of students due to time and resources limitations.

The field of study of Science and Engineering was selected as a sample course area to view international students and their understandings about the Australian education and training system as there was an assumption that students studying courses in this field might have more vocationally related career intentions. In comparing the Science and Engineering field of study to any other career pathway this study is limited to one of a statistical nature derived from AEI and other data. There have been a number of changes to the nature of the data collection (Appendix 8) and as a result the interpretation of time-sequence data is sometimes qualified. Issues also arose with respect to collecting and comparing data across nine institutions from different sectors where the basis of enrolment methodology varies. National or cultural characteristics could

potentially have a bearing on the interpretation of data, for example in some Asian countries government education is more valued (perceived as of a higher standard) than private education.

1.9 GROWTH OF INTERNATIONAL EDUCATION OVER THE TIMEFRAME OF THIS STUDY

When I commenced this study (in 1999) there were 162,855 international fee-paying enrolments (Australian Education International, 2001b). At the time I thought this number of enrolments was significant for the Australian education and training system. Now, at the completion of the study, there are 322,776 enrolments – an increase of over fifty percent. Given the size of this figure in relation to the total numbers in the Australian education and training system the need to research how international students and local students interact seems even greater.

1.10 ORGANISATION OF THIS THESIS

Following this chapter there are five additional Chapters. Chapter 2 begins with background information on the development of international education in Australia and a literature review of career education. The scale and nature of international education in Australia is considered in relation to its major competitors, the USA and the UK. There is an explanation of curriculum developments in relation to international education together with the emergence of the internationalisation of education; the Australian training reform agenda and its impact (especially on the VET sector) are also discussed. There is a consideration of career development and guidance and what a career means for the individual together with a review of Australian and OECD career provision. The term career pathway and how this has been viewed in a number of different ways is discussed. The Chapter concludes with an overview of the research that has been undertaken in regard to international education and career education in Australia, and considers how the study of Science and Engineering is as a pathway to a career.

Chapter 3 presents the participatory methodology used in this study (Wadsworth, 1998). There have been changes to the method of gathering statistics for international students, and these changes and an analysis of the data in relation to students studying in the fields of Science and Engineering are discussed. The development of the survey instrument, its trial and approaches made to institutions to disseminate the instrument is explained, together with the development of the focus questions and an interview of a sample of those who completed the questionnaire.

Chapter 4 provides an outline of the results of the findings of the questionnaire and interview samples. Details about the relevant population of each sample are given. The results for the questionnaire include the outcome of a number of cross-tabulations on the data, and there is a consideration of the main issues that arise from the questionnaire sample. These issues are then viewed in the light of remarks from students during the interviews, and data from both the questionnaires and the interviews is examined on an institution-by-institution basis.

Chapter 5 considers the findings in relation to the institutions, sectors of education and training, and gender and cultural aspects of career education. The career model used by each of the institutions in this study is discussed and feedback from representatives on the results and findings is included. Discussion on the career provision for international students and the career provision in a number of Asian countries together with an examination of the cultural interpretation and cultural validity of such models is also included. The Chapter concludes with a discussion on the factors influencing career aspirations, in particular gender, together with specific comments on factors relating to those students who take up a course of study in Science and Engineering.

Chapter 6 concludes this study with the major findings, both quantitative and qualitative, and makes recommendations to a number of stakeholders

involved in international education in Australia such as government agencies, institutions, professional bodies and students. There are also suggestions for further studies to continue the exploration of aspects relating to international students and the Australian education and training system.

Chapter 2

BACKGROUND AND LITERATURE REVIEW

2.1 INTRODUCTION

There are a number of factors that have given rise to an international education industry in Australia, based upon commercial imperatives, as distinct from an earlier era when students were supported on scholarships. These factors, together with data about this field and Australia's major competitors are discussed together with the regulatory environment in which the industry operates. International education in Australia is now more than just students. Curriculum developments and the rise of the internationalisation of education are traced, together with the emergence of offshore Australian programs. There is a summary of how international education has impacted on each of the main sectors of education and training. An overview of the development of the Training Reform Agenda in Australia in the 1990s is included, together with a background to recent career education developments which are contrasted with the OECD scene. Career pathways, particularly the pathways leading to Science and Engineering, are also discussed.

The development of educational services for international fee-paying students is distinct from that provided to overseas students. Shortly after World War II Australia became a participant in the Colombo Plan, an important element of its participation being to provide education and training services to overseas students, especially from South and South-East Asia on fully-funded scholarships. Australia still funds such education places through its AusAID scholarships.

A small number of students come from overseas on educational exchange programs. These programs are intended to be reciprocal in nature with Australian students heading offshore in return. The students studying in exchange programs lie outside the scope of this study, but sometimes it is

hard to distinguish between exchange programs and some fee-paying programs, such as the Study Abroad programs.

The development of the international student fee-paying industry in Australia commenced in the 1980s. In part, the industry had as its basis the development of an export-focused industry to satisfy the world demand to acquire English language skills and proficiency. In 1986 the Commonwealth Government removed the restrictions on educational institutions to enrol international fee-paying students. Andressen (1997) points to 1990 as a critical date, when there was a transition of the government's overseas student policy, which "effectively shifted from an 'aid' to a 'trade' approach" (p.78). At about the same time, under the Hawke and Keating governments, there was a federal government policy initiative for a greater engagement with the countries of Asia.

Whilst economic considerations might have dominated the original decision, these sentiments soon broadened into trade, greater understanding, goodwill, and enrichment of Australian students' educational experiences. Harris and Jarrett (1990) report on many aspects of the change from an overseas aid-based program of supporting students studying in Australia, to the emergence of a fee-paying international student policy. By 1992 this change was reflected in government policy when the education minister at that time put forward a blueprint for how the industry might develop (Beazley, 1992).

The reverse flow of Australian students travelling overseas for education and training is by comparison very small with many of these students being on student exchange visits. Again, this particular flow of students lies outside the consideration of this study. Concurrent with the development of the international fee-paying industry was an increased emphasis on the teaching and learning about Asia in Australian schools. This recognition was initially acknowledged by the federal government when it established the Asia Studies Council (Commonwealth

Department of Education, 1986) and later, the Asia Education Foundation.

2.2 INTERNATIONAL EDUCATION

2.2.1 INTERNATIONAL EDUCATION - AN EMERGING INDUSTRY

The scale of the international education industry for the higher education sector was calculated by Jolley (1997) based on UNESCO 1996 data. He assessed the global flows of students travelling to countries in terms of net exporters and net importers of education. The United States of America, OECD Europe, Australia and Canada were identified as net exporters, and the Middle East, Latin America, Africa and Asia as net importers.

The major providers of international fee-paying education are the United States of America, the United Kingdom, and Australia (Table 2.2-1). Andressen (1997) attempted to quantify Australia's share of the world market. In 1994 he estimated it at 3.3 percent, and rising to 5 percent in 2000 and 7.5 percent by 2010.

Table 2.2-1 Major Countries Involved in International Education

Rank	Country	Number	Year Data Available
1	USA	572,509	2003-4
2	United Kingdom	340,280	2002-3
3	Australia	303,324	2003

Source: British Council, 2005 (UK); IDP Education Australia, 2004a (Australia); Institute of International Education, 2004 (USA)

The major source countries for international education to the USA, UK and Australia are in order of significance the PRC, India, South Korea and Japan (Table 2.2-2).

Table 2.2-2 Major Source Countries for International Education for Australia, UK and USA

Rank	Country	Number
1	PRC	152,140
2	India	105,022
3	South Korea	85,055*
4	Japan	76,491
5	Hong Kong	40,856
6	Malaysia	36,462
7	Taiwan	30,413

Source: British Council (2005), IDP Education Australia (2004), Institute of International Education (2004) (* specific South Korean figure unavailable for the UK)

Both the UK and the USA have in recent times issued significant statements about international education. Prime Minister Blair has issued a major policy statement (Blair, 1999) while in 2000 President Clinton issued a similar one (Clinton, 2000) and this was followed by a subsequent US Senate resolution (Senate of the United States of America, 2001). Blair set “25 % of the global market” as his country’s objective (Carlton, 2001, p. 7). The Australian Vice Chancellors’ Committee sees the UK, USA, Canada, New Zealand, Germany and Singapore as the main competitors to Australia for students (Australian Vice Chancellors' Committee, 2003a). Nuevo (2002) maintains that in “contrast to other global competitors, Australia is withdrawing the benefits that international students used to have, and worsening economic pressure under which they live” (p.5).

Table 2.2-3 OECD Countries Proportion of Overseas Students 2002
Data Compared with 1998

Countries	% 2002	% 1998	Male % 2002	Female % 2002
Australia	17.7	12.6	52.7	47.3
Canada	-	2.8	-	-
New Zealand	9.5	3.7	49.5	50.5
United Kingdom	10.1	10.8	51.5	48.5
United States of America	3.7	3.2	56.2	43.8

2002 n = 1,898,250

Source: OECD, 2004b (2002 Data)

Sawyer (2003) observes, “in percentage terms, Australia now has the highest international student population of any OECD country, and more than four times that of the United States” (p.2). For Australia, this is 20 percent and the USA 4.3 percent. Data from the OECD showed that in 2002 Australia had 17.7 percent of tertiary students from overseas compared to 10.1 percent UK and 3.7 percent for the USA (Table 2.2-3). International comparisons of data are only available for the higher education sector. The OECD has conducted a study of the significance of internationalisation and what it describes as ‘cross border’ education. The outcomes of this study were published in 2004 (OECD - Centre for Educational Research and Innovation, 2004).

The International Development Program Education Australia (IDP), formed by Australian universities in 1969 to market services in Asia (and now owned by 38 of them), played a critical role in the development of the industry. The Australian Education International Foundation, formed in 1995 as a section within the Commonwealth Department of Education, operated a number of Australian Education Centres (mainly in Asia). It was later reformed and replaced in 2001 by Australian Education International (AEI).

Ongoing consideration of the economic benefits of international education occurred with Industry Commission reports published in 1990 (Harrold, 1990) and 1991 (Industry Commission, 1990). There was a preoccupation in these reports about whether export development would have an adverse impact on domestic education. The industry gained a further impetus to expand by changes in the funding arrangements of the higher education sector. This resulted in institutions attempting to raise a greater proportion of their funding through marketing for international students.

Educational institutions are some of Australia's biggest exporters (Robbins, 1996). Whilst the industry development has paralleled that of the tourism industry, its size and economic significance is far less understood in the wider community. The growth patterns of the last two decades have been influenced by political factors, such as the Tiananmen Square Massacre and the 1997 return of Hong Kong to the PRC; by economic factors like the Asian economic crisis in 1997, and changing currency values, particularly the fluctuations of the Australian dollar; by other events such as the outbreak of Severe Acute Respiratory Syndrome (SARS) and Bird Flu, the terrorist attacks of September 11 (2001), and the Indian Ocean Tsunami events of late 2004. There is a long established tradition, in Malaysia especially, of students travelling overseas for education, mainly post-secondary education. Policy directive by the Malaysian government after the 1997 Asian economic crisis had an immediate impact on enrolments in Australia. The Malaysian government was keen to stop the outflow of capital and removed the taxation benefits that had once applied to parents who had sons or daughters studying overseas.

New international education destinations are emerging. Follari (2004a) has compared the living costs of the five main English-speaking destinations, the USA, the UK, Australia, Canada and New Zealand and found "Australia is the second most expensive" (p.15). He identified

Hong Kong, PRC, Singapore and Malaysia as the emerging Asian study destinations, along with Ireland. His presentation highlighted the appreciation of the Australian dollar between June 2001 and June 2004 (by 33 %) as a factor that could have an impact on the ability to recruit students from various markets. Whilst the PRC has become the most significant source of international students for Australia, it is also developing its own capacity to receive students. It has been estimated that PRC currently has 86,000 international fee-paying students and it has a target of enrolling 120,000 by the Beijing Olympics in 2008 (Follari, 2004a, p. 31). Most of these students are from Asia, but as this is the origin of nine of the top ten source countries to Australia it may provide yet another challenge for those who market Australia's education industry.

2.2.2 DATA ABOUT THE INDUSTRY

Increasing student mobility over the last two decades has had implications for data gathering. As numbers of students have grown there has been the need to clarify definitions of student types, in order to distinguish between those undertaking a tourism experience and learning some English, and those whose primary focus is as an international fee-paying student. Andressan (1997) highlights the difficulty of interpreting data as well as the lack of consistency due to changes in definitions. He also raises the issue of whether to count students studying English who may be tourists as well.

Since 2002 AEI has had the benefit of using a shared database, the Provider Registration and International Students Management System (PRISMS), with the Department of Immigration, Multicultural and Indigenous Affairs (DIMIA). This database allows more accurate gathering of data and sources student statistics based on the issuance of student visa subclasses. One consequence of this is that the data set has considerably more detail about students, derived from the visa information, and this removes some of the potential definition issues of

the past. However, it also has an impact on interpreting time series data. This is evident in the AEI time series data tables with an ‘other’ category representing non-award course students appearing for the first time in 2002.

Table 2.2-4 International Fee-Paying Enrolments in Australia

Year	Total Fee-paying Enrolment
1986	2,000
1991	48,000
1998	147,130
2004	322,776

Source: Australian Education International, 1999: Department of Education, Science and Training, 2005. (Note - Some definition change has occurred over this period.)

Table 2.2-4 highlights the rapid increase of student enrolments in just under two decades, though the table should only be used as a broad indicator of the growth of the international fee-paying student numbers because of the definition changes that have occurred over this period (see Appendix 8 for a more detailed explanation of these changes). Table 2.2-5 indicates the significance of geography, with nine of the top ten source countries being in Asia. What is more significant over this period, however, is the change of student numbers by sector. Table 2.2-6 shows the increasing significance of international students to the Higher Education sector, the relative decline in the ELICOS and VET sectors and the very significant decline in the School sector. The latter decline in part can be explained by the widespread emergence of Foundation programs, which usually operate in a Higher Education setting, but even in the School sector, numbers increased in absolute terms by nearly 50 percent between 1994 and 2003.

Table 2.2-5 Source Countries for Top Ten International Fee-Paying Students to Australia-2003

Rank	Country	Number	Percent of Total
1	PRC	57,579	18
2	Hong Kong	23,803	7
3	South Korea	22,159	7
4	Indonesia	20,336	6
5	Malaysia	19,779	6
6	Japan	18,987	6
7	Thailand	17,025	5
8	India	14,386	4
9	USA	12,189	4
10	Singapore	11,843	3
	Other	85,238	34
Total All Countries		303,324	

Source: IDP Education Australia, 2004b

Table 2.2-6 International Fee-Paying Students by Sectors 1994 Compared with 2003

Sector	1994 Number	1994 - %	2003 Number	2003 - %
School	12,780	14	26,799	9
VET	19,479	21	57,326	19
ELICOS	26,173	28	60,930	20
Higher Education	35,290	37	136,252	45
Other	-	-	22,017	7
Total	93,722		303,324	

Source: Australian Education International, 2004c

The comparison of international data is made more complex due to definition difficulties and a lack of consistency in collecting data. Usually only Higher Education data is available for international comparison purposes. This certainly is the case with OECD data. The report OECD-Centre for Educational Research and Innovation (2004) estimated that Anglo-Saxon countries accounted for 54 percent of the international education market. This report pointed to this occurring because:

Their advantages include English as a lingua franca, flexible degree structures, more student-centred approaches, strong traditions in distance learning, off-shore delivery strategies (especially the United Kingdom and Australia), (differential) fee systems which give institutions incentives to market themselves actively, including overseas, and governments which actively support such strategies (p.102).

2.2.3 ECONOMIC IMPACT

The value of the international education industry in Australia is about \$A 5.2 billion (Vanstone, 2005b) for the 2003 calendar year, but this figure included offshore activity. This dollar value equates to international education being the tenth largest export industry for all goods and services. The figure takes account of the cost of education (course fees) and student expenditure while in Australia. This is a 10.7 percent increase in dollar values over the previous calendar year.

The PRC is contributing most to the recent significant growth of student numbers. This country's growth across all sectors for 2003 compared with 2002 was 20.1 percent. India is another emerging market, with growth across all sectors in 2003 compared with 2002 at 26.6 percent. Growth of total international student numbers in 2003 was 10.8 percent over the previous calendar year, however across the sectors the growth rates vary significantly. The growth from PRC is stronger in Higher Education (37.3 %); VET (33.4 %) and Schools (21.3 %), students from South Korea are contributing to growth in the Schools sector (34.5 %), ELICOS (36.7 %) and Higher Education (22.3 %). Numbers from South Korea declined significantly in the VET sector, down 18.7 percent. The contribution of students from India is significant in Higher Education with a growth in numbers over the previous calendar year of 38.9 percent. Numbers from Thailand grew by 49.8 percent in the Schools sector.

The pattern of growth and the reasons for this growth across Asian countries varies considerably over time, and has been analysed across 1976-95 by Andressen (1997). He concludes that

...one must consider a wide range of both structural factors as well as those pertaining to individual choice in both the home country and the destination in order to arrive at a clear understanding of who comes to Australia and why (p.95).

There tends to be a concentration of international students in fields such as Business (including Management), Information Technology (IT) and Computing.

“Overseas students now account for more than 20 % of enrolments...” (Sawyer, 2003, p. 3). Course fees are considerably cheaper in Australia compared to the UK or USA. Australia’s proximity to Asia and minimal time differences from key markets are also important considerations. Garnaut (1989) points to students being able to work up to 20 hours per week as another factor that enhances Australia as a cost effective destination. The growth of the international education market shown in Table 2.4 reflects the change in government policy in Australia (fostering a rapid expansion of the industry), as well as economic growth in Asia and the increasing living standards that can allow families to consider sending their sons or daughters overseas to study.

A link between international students, the opportunity to obtain Permanent Residence status, and skilled migration seems to have emerged and can, in part, explain the recent dramatic increase of enrolments at particular levels, such as at the Masters level, and in some subject fields. “Changes to Australia’s visa regulations in 2001 made it easier for foreign graduates to obtain permanent residency status if they completed relatively short masters by course work degree in IT and certain other fields” (Maslen, 2004b, p. 3).

Bonus points are available to recent graduates to assist them to meet the points test requirements for skilled migration visa subclasses. However in 2003-4 there was a further refinement to the test to give additional points to those who had studied in regional areas (defined by the Australian

Migration Regulations as all areas except for Sydney, Newcastle, the Central Coast of New South Wales, Wollongong, Brisbane, the Gold Coast, Perth and Melbourne).

Maslen (2004a) highlights the increasing significance of international students to universities stating that “more than one in five ...will be foreign fee-payers who will contribute about \$2 billion to university budgets” (p. 5). Conversely, others such as (Nuevo, 2002) lament about whether enough of this revenue is being reinvested in an appropriate range of services to support international students. More recently (Maiden, 2004b) has written an article on a similar theme titled “Foreigners Treated as Cash Cows” (p. 31), while Fullerton (2005) outlines how this scene might be about to change, with an overseas university (Carnegie Mellon from the USA) planning to establish a campus in South Australia in 2006.

2.3 REGULATORY ENVIRONMENT GOVERNING INTERNATIONAL FEE-PAYING STUDENTS

2.3.1 EMERGING REGULATION

The development of international education occurred in a relatively unregulated way. Baker, Robertson, Taylor, Doube and Rhall (1996) outline the policy background to overseas and international fee-paying students studying in Australia. The late 1980s saw some adverse criticism of a number of education providers, and because of concerns that the industry might be tarnished by these providers, the federal government decided to regulate all providers wishing to offer courses to potential international fee-paying students.

The development of the Commonwealth Educational Services for Overseas Students (Registration of Providers and Financial Regulation) Act in 1991 ("ESOS Act," 1991) was designed to regulate educational providers whilst the students themselves applied for a visa under the

Migration Act. Complimentary legislation to support this development was required in all states and territories.

The ESOS Act regulated providers and registered courses. It also established the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS). The key aspects of this legislation were to assist and maintain migration control and provide consumer protection for students. There was an attempt to ensure that ethical practices were observed through a voluntary code on marketing. The legislation ensured uniformity with regard to enrolment procedures. Importantly, it provided a basis of consumer protection, as substantial tuition fees had to be paid in advance.

The Department of Employment, Education and Training released a policy handbook in 1992 (Department of Employment, 1992). In a statement in the introduction of the handbook, the Minister, Kim Beazley, put forward what the government saw as the benefits of international education. Not only does this handbook outline international student policy, types of international students, requirements for education providers and codes of conduct in dealing with students, it also outlines safeguards for Australian students. The federal government was concerned that Australian students would not be displaced with the developing, international student fee-paying industry. There were ongoing tensions over the legislation governing the industry. The educational community, on numerous occasions, thought that visa arrangements (determined by DIMIA to screen potential migrants) hindered the development of new markets. Researchers have documented in detail, the development of regulation and its complexity with issues affecting the workforce with such things as work rights for students (Baker, Robertson, Taylor, Doube, & Rhall, 1996).

The lack of a federal government profile of the international education industry was also viewed by some sectors to be hindering their growth.

The Affiliation of International Education Peak Bodies (AIEPB) was developed as an umbrella group composed of all sectors to lobby the government. More recently, the International Education Association of Australia has been established to promote international education.

In a policy context the most recent statement was released in 2003 by the former Federal Minister for Education, Science and Training, Brendan Nelson. The statement contains a framework for the continued development of the international education industry. It highlights possible strategies for diversification, and includes measures to protect migration issues for individuals, arising from the growth of the industry.

2.3.2 ESOS ACT REVIEW 2000/NATIONAL CODE

In 1999 three private providers collapsed due to mismanagement. The effectiveness of the 1991 legislation was called into question and at the time, politicians complained that the sanction provisions of the legislation had never been used. A review of the Act was undertaken with the industry through a consultation process. New legislation was drafted: the Education Services for Overseas Student Act 2000 ("ESOS Act 2000," 2000) which focused on a greater need to quality-assure providers. The legislation incorporated a National Code (Department of Education Training and Youth Affairs, 2001), which was intended as the instrument to ensure quality assurance by articulating the basis of standards for the registration of providers. A related change to the Migration Act was proposed where the one student visa subclass 560 was to be replaced by seven subclasses basically reflecting the needs of the various sectors. The new legislation came into force on July 1, 2001.

One challenge that lies outside the scope of Australian legislation is the case of an offshore agent promising articulation into onshore courses. Given the likely growth of such programs this will be an area of increasing interest to regulatory authorities. Preliminary work has occurred in relation to this with the Australian Universities Quality

Agency to be given extended responsibilities to monitor the operations of universities offshore (Department of Education Science and Training, 2005d). A review of the ESOS Act 2000 has recently been undertaken (Phillips KPA and Lifelong Learning Associates, 2005). The review highlights the 25 percent of international students studying in offshore programs lying outside the current regulatory arrangements. Also proposed in the review is the need for a clarification of some aspects of the National Code of 2001.

2.4 CURRICULUM DEVELOPMENTS

2.4.1 PRODUCT DIVERSIFICATION

Foundation Studies is the name given to those programs developed by universities for international students who have reached the entry level for university study but have not attained the standard demanded by particular faculties/schools of study for entry to undergraduate degree courses (CESCEO Working Party, 1995, p. 1).

These programs are usually of Grade 12 standard and have been the cause of friction within the School sector, as evidenced by CESCEO (the CEOs of school systems) establishing a Working Party to consider them. Sometimes Foundation Studies have been described as *Fast Track*. Where the term *Fast Track* is used the studies have acted as a bridging course, providing the student with English language support, usually in the form of English for Specific Purposes. The program has an accelerated nature, where it is possible to more quickly complete the nominal length of the course.

In its rationale to the Admissions Policy Committee of the University of Tasmania, the International and Commercial Services Office explained that many international students had finished university in their home countries and felt uncomfortable returning to schools in Australia to obtain the appropriate background to then proceed onto higher education (International and Commercial Services - University of Tasmania, 1997).

The proposal was aimed specifically at students from Thailand, South Korea, Japan, and Taiwan but also might apply to some students from Malaysia, Singapore and Indonesia. At the time some “27 of Australia’s 38 Universities [had] Foundation programs” (International and Commercial Services - University of Tasmania, 1997, p. 2). It was also felt that by being in a university setting students unsure about their intended major were more likely to make a more informed decision. No mention was made in this proposal of pathways and/or career intention. The program was to have three streams, one of which related to Science and Engineering.

Advanced standing and guaranteed entry have been the marketing labels sometimes associated with Foundation Studies programs, but more recently they have also been associated with universities (or their private arms) establishing specific colleges to offer Foundation Studies and other bridging courses. An example of this is the Monash Diploma and Monash University Foundation Year offered by Monash College (Monash College, 2004). In due course some of these programs, such as the one at the University of Wollongong, were opened to Australian domestic students.

Bridging programs, Study Abroad and Study Tour programs are usually shorter than a year. Some can be so short (less than three months) that participants can arrive into Australia on a ‘visitor’ visa. Until very recently, Australia has been missing out on the ‘gap year’ (junior year abroad) market, which is very significant to the UK and other European countries. Study Abroad programs have not necessarily captured this market.

2.4.2 THE DEVELOPMENT OF OFFSHORE PROGRAMS

Issues relating to the recognition of qualifications shaped the development of offshore programs. For some universities it was easier to mount a program in the student’s home country rather than gain the

necessary approval and recognition of courses in a variety of countries. The development of offshore programs by institutions in the past has usually been seen as complimentary to the expansion of international student numbers at home. The scale of some overseas programs now leads to questioning whether this will continue to be the case. Up to 25 percent of Australian university international students are now studying offshore.

The distinction between branch campuses, as part of a multi-campus system, and franchised programs (usually first year of undergraduate program) in a local college boosting recruitment and catering to local investment, is sometimes difficult to ascertain. Usually, *franchising* is where an Australian institution has partnered with a local institution to deliver its curriculum, and the latter receives accreditation from the Australian institution. Lewis (2001) outlines issues relating to students rights and whether they have access to university onshore grievance procedures. It is evident that approaches to the operation of these arrangements vary widely and details are often not obvious because of “commercial in confidence” labels (p. 11). Jopson and Burke (2005) have reported recently on some offshore ventures that appear to have gone awry.

Saffu (2000) examined the strategic arrangements of 22 Australian universities in 2000 focusing on what he describes as “collaborative relationships” (p. 37). His study is based on both a review of the literature and a mail out of a survey to all universities in 1997. The findings indicate a strong focus on Asia (86 % of current alliances). The contribution of the Australian partner focused on accreditation (“access to higher qualifications 72 %”, p. 40) and with the offshore partner largely contributing financial resources (69 % of respondents). AEI has recently conducted a survey on these types of relationships to again update what arrangements currently exist (Bannerman, Spiller, Yetton, & Davis, 2005).

IDP Education Australia (2004c) now records its Australian university data distinguishing between Onshore (Full degree, Study Abroad, Exchange and Other) and Transnational (Distance online and Offshore on a campus). In Semester 2, 2004 there were 57,215 students studying in Transnational programs with growth occurring, from the United Arab Emirates, Vietnam and Sri Lanka in particular. Of the 57,215 students, 71 percent were studying on a campus.

The advent of the Internet has allowed for the potential development of the ‘virtual university’ and provides at least the capacity to support branch campuses offshore using a combination of mixed modes of delivery. Bushell (1999) cites government cutbacks, and requirements that universities operate like businesses, as creating the background for these developments.

Hilsberg [quoted in Bushell] says the success of Australian universities in attracting Asian students over recent years is already under threat from moves by elite US institutions to put in place online programs to nurture gifted Asian children in the interest of developing brand loyalty. (Bushell, 1999, p.91)

The establishment of campuses or schools in their own right has been a recent initiative for universities. “Monash University of Melbourne is to expand its operations in Malaysia with the development of a new campus to accommodate up to 8,000 students” (South China Morning Post, 04/05/02: Education 2) in (Calvert, 2002b, p. 4). Two of the four universities participating in this study have offshore branch campuses (Table 2.4-1).

Table 2.4-1 Australian Universities Offshore

Country	University	City	Comment
Malaysia	Curtin	Miri	
	Monash	Kuala Lumpur	
	Swinburne	Kuching	
Singapore	UNSW Asia	Singapore	
	James Cook	Singapore	
South Africa	Monash	Johannesburg	
Vietnam	RMIT	Ho Chi Minh	Opened August 2005
		Hanoi	

This concept has even extended to the operation of schools offshore by state education departments. The Tasmanian Education Department managed a school owned by Kaltim Prima Coal at Tanjung Bara in Indonesia from 1991 until 2004 (the WA Education Department took over management in 2005) to educate expatriate children (Maiden, 2004a, p. 16). One component of the program used Tasmanian curricula.

The licensing of curriculum and support materials has been seen as another potential revenue source for international education. The Victorian Education Department has had considerable success selling its curriculum programs into the Middle East. In part, this is a response by Australian institutions to the emergence of low cost competitors in Asia. Tasmania is supplying curriculum and staff to the South Ocean Group (owners of private schools) in the PRC with the objective of some of these students then being recruited into Australia. In effect their Australian education and training pathway will have started at home.

Twinning can be used as a broad term to describe strategic alliances, or can refer more specifically to the recognition of another educational provider's programs. The most common arrangement is for a student to complete a program offshore, receive advance standing for the work they have completed, and commence their studies onshore in the second or third year of a course. The interview sample in this present study had three students who were able to do this, two from Malaysia and one from

Vietnam. The significance of offshore program development has an impact beyond the education industry with Ziguras and Walsh (2000) being commissioned by Telstra Australia to undertake research on the manner of delivery of these programs. The research is also aimed at examining how the curriculum can be internationalised for the intended audience.

2.5 THE INTERNATIONALISATION OF EDUCATION

In an Australian context, internationalisation gained considerable impetus as a result of a statement by Kim Beazley (Minister for Employment, Education and Training) in 1992 in a preface to an International Students Policy Handbook produced by DEET.

The terms ‘internationalisation’ and ‘international education’ reflect the move to a more internationally oriented education system. Accepting international students at Australian institutions is only one element in this process. It also involves making courses and teaching methods more internationally competitive through links with business and through agreements with overseas governments and educational institutions (Beazley, 1992, p. 3).

Johnston (2001) quotes the OECD definition of internationalisation of the curriculum as “Curricula with an international orientation in content, aimed at preparing students for performing (professionally/socially) in an international and multicultural context, and designed for domestic students as well as foreign students” (p. 2) as the basis of the University of Tasmania work in this area.

A 2003 International Associations of Universities study of internationalisation listed the following reasons (in order of importance) for universities to engage in such activities:

...mobility and exchanges for students and teachers; teaching and research collaboration; academic standards and quality; research projects; co-operation and development assistance;

curriculum development; international and intercultural understanding; promotion and profile of institution; diversity source of faculty and students; regional issues and integration; international student recruitment and diversity income generation (Knight, 2003, p. 12)

At the school level there is the crossover involving the study of Asian countries (Asia Education Foundation, 1995) and the wider preoccupation of how Australians see themselves and are seen by others (Curriculum Corporation, 2001). The Asian Education Foundation study not only provides schools with a rationale for studying Asia in the curriculum, but also suggests how this could involve a whole school approach. Muller (1996) outlines the changing fortunes of studying about the countries of Asia in the Australian curriculum over the last two decades. Kirby (2004) contrasts the Australian experience of internationalisation in schools (including studying about Asia) with the USA, Japanese and Spanish experiences.

The VET sector in Asia and the Pacific is described as technical and vocational education and training (TVET). Qureshi (1996) outlines the cross-transference of structural changes to TVET systems in a number of Asian countries, for example, in Bangladesh (adoption of national skill standards), the PRC (use of Competency-Based Education), and Japan (increasing flexibility of upper secondary education). For the VET sector there is a tension between attracting international students and obtaining student visas for fixed periods, whilst at the same time accommodating the characteristics of training packages (Competency-Based Training and on time delivery) where students can study at their own pace.

In the context of the higher education sector, (Gallagher, 2002) and (Hamilton, 1998) have put forward their views, from their positions respectively in DEST and the AVCC. For a more pragmatic view, studies have quality assured Australian providers against others (McKinnon, Walker, & Davis, 2000). Reports have examined the skills that young Australians need to survive in a globally competitive world

(Australian International Educational Foundation, 1998). While vision statements to put this into effect have been developed (Varghese, 2001).

In part, the internationalisation of education mirrors the increasing economic trend of globalisation and the increase of Asian immigration to Australia but from the perspective of this study, it is an acknowledgement of the hundreds of thousands of international students studying side by side with Australian students in this country. Increasingly, Australia has been brought into a growing partnership with its near neighbours. This is a significant departure from the historical view described by Kell (1997) as “either the paternalistic teaching of scholarship holding students from ‘lesser developed countries’ or exacting much needed revenue from full fee-paying students from the richer Asian countries” (p. 6).

From an overseas perspective, others have made statements about internationalisation, for example, Chen (1998) provides a Chinese view, and a Japanese view comes from Isero (2001). The Association of International Education Exchange conducted a survey of the impact of internationalisation in Japanese schools in 1995. Hughes P. (1995) documents the reasons for educational reform in Japan, South Korea and China and goes on to comment on the need for a “reconsideration of the way we conceive schooling [because of] the concept of Lifelong Learning” (p. 10).

2.5.1 IN AN INTERNATIONAL CONTEXT

2.5.1.1 Bilateral Relations

Hamilton (1998) notes that of the total number of 2,657 agreements that Australian universities had in 1997, “461 [formal] agreements [were] with US institutions followed by 282 with Chinese institutions and 216 with Japanese institutions” (p. 2). By May 2004 these agreements had increased to a total of 4,485, the most significant countries being the USA (695): China, including Hong Kong (462) and Japan (369). Of these

agreements, the majority (72%) were for student exchanges (Australian Vice Chancellors' Committee, 2003b). The AVCC set bilateral relations as a goal in Outcome 2 in their Strategic Plan (Australian Vice Chancellors' Committee, 2000).

2.5.1.2 *Alliances/Transnational experiences*

McKinnon, Walker and Davis (2000) have developed two benchmarks for universities relating to alliances and transnational experiences. They identified benchmark 10.6 as the *management of offshore delivery*, and 10.7 as that of *overseas links and activities*. At the 1999 IDP Australian International Education conference a vision statement about the direction of Curtin University of Technology was given by Jeanette Hacket outlining the possible mix of international programs between onshore, offshore and the internet in the future (Hacket, 1999). How to maintain quality is a fundamental issue that is identified. In her study Hacket gives details of experiences of developments in Singapore and Malaysia, against a background of government policy promoting offshore ventures.

2.5.1.3 *Transferability of Australian Experiences*

Halse and Baumgart (1996) quote the experiences of Science educators visiting Sydney from Pakistan (in terms of the transferability of Australian education) being confronted with a student inquiry approach to learning when their own perception was “that curriculum change was the domain of educators in authority positions” (p. 45). One aspect of Australian curriculum development is its multicultural background. Pedersen (1997) points to the positive aspects that can flow from cross-cultural experiences, whilst Bohm (2000) identified in a study of Australian offshore programs, that “only 25% of programs had incorporated curriculum that had been adapted for local conditions” (p. 6). From a cultural point of view Tudball (2004) observes that “too often, overseas students are expected to assimilate to the dominant culture, and have no opportunity to explore non-Western traditions in their studies, or indeed, in their social life here in Australia” (p. 3).

Conversely, by their presence in Australian education and training institutions, international fee-paying students “help internationalise the experience of Australian students by contact with those students and by influencing teaching content and methods”(Australian International Educational Foundation, 1998, p. 5). At least they raised a consciousness, although how profound this is on any structural aspects of the education and training system is open to debate.

The credibility and acceptance of Australian higher education qualification in the market place is in part explained by the growth of international student numbers over the last two decades. The Australian qualification that is not as well known (especially in Asia) is the VET qualification. Morgan (2000) reports on a KPMG study of the relative standings of Australia’s VET qualifications in Malaysia and Thailand against competitors’ qualifications, in the fields of Business and Administration, Tourism and Hospitality, and IT and Telecommunications. Their findings were that, with the exception of the UK, the Australian VET qualifications were situated within a single national competency framework. Perceptions of the Australian qualification were in part influenced by the understanding of the local VET equivalent qualification. Another finding was that “Australian VET, however, was particularly valued in Malaysia and Thailand for its relatively greater capacity to assist students progress within, and between, the VET and Higher Education sectors” (Morgan, 2000, p. 2).

2.5.2 IN AN AUSTRALIAN CONTEXT

Efforts have been made to develop stronger ties with education institutions offshore and use these as part of the learning process with Australian students onshore. The ‘Australian Studies Off Shore Project’ is an example of this occurring in the school sector (Australian International Education Foundation, 1998a). The intention was for a network of schools (18 were ultimately involved in Australia) to work collaboratively with schools in the Asia Pacific region to develop

curriculum programs and teaching methodology. In many cases the project did not really get beyond the contact stage or 'sister school' link. In some cases, the Australian schools wanted to use the IT technology which was unavailable to their partner school offshore. This project was part of a wider DEETYA \$A3 million, three year Australian Studies program, which involved adding an Australian element to overseas curricula.

2.5.3 IMPACT ON SECTORS IN AUSTRALIA

The Australian International Education Foundation highlights the breadth of activity of international education across all sectors beyond providing for international fee-paying students. This is partly in response to the view that "increasingly Australian graduates will be employed in professions /occupations having international dimensions. Acquiring skills and working with people from different cultures will be an essential part of the preparation of new graduates" (Australian International Educational Foundation, 1998, p.1). Smith R. (2004), citing research with New Zealand schools, has found that the "two most important benefits from hosting international students [are] the increased cultural diversity aspects and the additional income that international students generate for the benefit of the whole school" (p. 2). Beyond international fee-paying students there are a far wider range of activities prevalent as evidenced by a survey of state education department activity in 1999-2000 (Table 2.5-1).

Table 2.5-1 Public Education Departments - Range of International Activities 1999-2000

Activities	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Consultancies (project management)		•	•	•	•	•	•	
Inbound Study Tours	•	•	•	•	•	•	•	
International fee-paying students	•	•	•	•	•	•	•	•
MOU/agreements Govt to Govt	•	•	•	•	•		•	
Outbound Study Tours		•	•		•	•	•	
Sale of services and intellectual property	•	•	•	•	•		•	
Schools/Programs offshore			•	•	•	•	•	
Sister schools – formal arrangements	•	•	•	•		•	•	
Student exchange management	•	•	•	•	•	•	•	•
Teacher exchanges	•	•	•	•	•	•	•	•
Twinning arrangements				•			•	

Source: Calvert (2000)

In the higher education sector one example that is relevant to this study is that “the University of Tasmania has a twinning arrangement in engineering with Ho Chi Minh City University of Technology with some students from each country studying in the other” (Australian International Educational Foundation, 1998, p. 6).

2.6 THE DEVELOPMENT OF A SEAMLESS EDUCATION AND TRAINING SYSTEM IN AUSTRALIA

2.6.1 THE NATIONAL EDUCATION AND TRAINING REFORMS OF THE NINETIES

The impetus for a change to the structure of education and training came about because of increasing technological change, the need to realign skill levels to work practice, changes in employee relations and the need for Australia to be more competitive in the emerging global economy. There was also the intent to realign the education and training system away from dominance by the higher education sector and its influence, especially on Grade 11 and 12 curricula. The federal government established a variety of committees and inquiries. Three reports released over 1991-2 that had a significant impact on the development of entry-level training and the emergence of a broader view of pathways were the Finn (Australian Education Council, 1991), Mayer (Australian Education Council / Ministers of Vocational Education 1992) and Carmichael (Carmichael, 1991) Reports. Each report contributed to furthering the *Training Reform Agenda*. The components cited in a shift in the structure of education and training were competency-based training, pathways, nationally recognised qualifications, articulation and credit-transfer, and the development of a new entry level training system.

The Finn Report focused on a “convergence of general and vocational education” (Australian Education Council, 1991, p. ix). This report discussed pathways in the context of recognising an individuals’ achievement when moving from one sector of education and training to the next. Mayer examined a range of employment-related competencies that young people should have on entering the workforce.

Carmichael advanced a new entry level training system, the Australian Vocational Certificate Training System (AVCTs). This report advocated a range of pathways linked by a system of giving credit for prior learning. Future courses would be based on national standards with ‘end-on

articulation' which would better facilitate the movement of students between providers and from one level of education and training to the next. The report also pointed to the need for Australia to be internationally competitive and it foreshadowed a decreasing demand for unskilled labour in the future. Each report outlined a series of targets and timeframes for implementation (Calvert, 1992).

The AVCts was based on a broad range of articulated pathways and nationally endorsed competency standards. As states and territories had the prime responsibility in the Constitution for education this was a significant initiative. Competency standards were to be developed on Competency Based Training (CBT). This form of training relied on achieving outcomes, and content was described in terms of competency which related to specified knowledge and skills applied to an occupation or industry. Significantly, courses and training were not to be viewed as time serving. Learning was to be based on the learner's existing level of competence which was to be recognised through Recognition of Prior Learning (RPL) and articulation. Assessment was to be undertaken when the learner was ready.

At the same time as the publication of each of these reports, new organisations were created to provide the structure to effect the implementation of these changes. These included the National Board of Employment, Education and Training, and the Employment Skills Formation Council.

2.6.2 THE PRINCIPLES OF RECOGNITION AND THE PORTABILITY OF QUALIFICATIONS

The development of the Australian Qualification Framework has been followed by the National Principles and Operational Guidelines for RPL also known as Recognition of Current Competence. More recently the AQF has been adapted to encompass cross-sectoral links and since November 2004 also applies to the School sector. Details of the AQF are available on <http://www.aqf.edu.au/aboutaqf.htm> (AQF Advisory Board,

2002a). In the production of this website the AQF is concerned with what is described as 'learning pathways'.

Many of the RPL, articulation and credit transfer arrangements tend to be recognition after the event, applying on an individual student basis. Albrecht (2004) outlines a project involving the Hunter Institute and the University of Newcastle to evaluate provision of advanced standing arrangements and to provide for a better pathway movement for students. Curriculum information of university courses was mapped against TAFE modules.

As part of this process the Hunter Institute made this information explicit on a website which has now been incorporated into the Department of Education and Training website and the University of Newcastle website http://www.newcastle.edu.au/study/credit/how_credit.htm. A reverse flow from university to TAFE courses is also possible. At a systems level in New South Wales, details on credit-transfer are available at <https://www.det.nsw.edu.au/hsctafe/index.htm> (Department of Education and Training, 2004).

Section C paragraph 26 of the AVCC Guidelines for the Provision of Education to International Students (Australian Vice - Chancellors' Committee, 2002) relates to giving credit transfer information to students. The AVCC set an objective in Outcome 3 to develop a credit-transfer scheme on behalf of the University Mobility in Asia and the Pacific Program (Australian Vice Chancellors' Committee, 2000) .

Haas (1999) has analysed trends in TVE articulation arrangements across Australia, Indonesia, Malaysia, the Philippines, Singapore and Thailand. He concludes that articulation arrangements are being developed in all of these countries although capacity and provision varied considerably; "effective articulation arrangements are a key factor in enhancing the status of technical and vocational education." (p.36). Haas raises an issue

that has challenged the VET sector in Australia: how to improve the appeal of VET studies in comparison to a university pathway. Mouhtouris (2005) reports on some recent work to try and measure the movement of students between the VET and higher education sectors in Australia. Haas also reports on the involvement of professional bodies in recognition processes with the Institute of Engineers requiring details of such arrangements when programs are accredited. Even within the career guidance field the development of mutual recognition arrangements for those being trained into the profession at an international level is slow (McCarthy, 2001).

2.7 CAREER DEVELOPMENT AND CAREER GUIDANCE

2.7.1 CAREER GUIDANCE

McMahon & Tatham (2002) define career guidance as “a multifaceted range of activities that assists individuals with career decisions. With its origins in the early 1900s, career guidance was largely viewed as an objective process whereby individuals could be matched to jobs” (p.1). Career guidance is essentially associated with giving out information. Sometimes this relates to working with the individual to identify strengths or weaknesses, or in a broader sense it can describe course counselling advice. To this end a variety of tests have been developed to assist in the client interview (Calvert, 2002a). Some of these tests are paper based, although more recently a considerable number have become available through career software. Some have sophisticated measurement functions (e.g. the Myers-Briggs Type Indicator) and to this end need a high level of formal training to administer. McMahon & Patton (2000) outline in considerable detail the changed nature of career education and the variety of assessment tools employed.

2.7.2 CAREERS AND WORK

Career development can be regarded as a process over one’s entire lifetime. Initially, a career related very much to paid employment. This

ignored unpaid work (working in the home) and voluntary work. Over the last twenty years the association between careers and paid employment has changed dramatically. The term now has wider meaning, encompassing periods of paid and unpaid work interspersed with education and training and lifelong experiences. Career development is life-long and can also embrace aspects of life-long learning. McMahon & Tatham (2002) comment in their paper on the myfuture website <http://www.myfuture.edu.au/>, that “lifelong learning is an intrinsic part of the career development process” (p.8). Over time, career development took on the notion of appearing to be linear in nature, moving from one step to another in a hierarchical sequence to achieve a job of a higher standing. The process of globalisation and increasing technological change, and the need to change work practices in response to this, discredited any notion of linear development. Patton (2001a) summarises this change occurring as a consequence of “The diversity in occupational structures at the beginning of the industrial era is being replaced by a globalised work force which is characterized by considerable flux and turbulence” (p. 2).

The nature of work is now such that an individual is likely to have a career made up of five or six periods of paid employment interspersed with periods of education and training, periods of retraining and maybe some periods of unpaid work (including nurturing responsibilities). For some people this might be modified by their enterprising talents and skills being used to create work as the basis for a career. More recently Cooper (2005) interviewing Peter Sheehan (a business adviser), has commented that Generation Y “will have 29 different jobs across five different industries in their working lives” (p. 18).

2.7.3 CAREER EDUCATION AND REPORTS

The Ministerial Council for Education, Employment, Training and Youth Affairs (MCEETYA) Career Education Taskforce endorsed the following definition of career education in 1998:

Career education is concerned with the development of knowledge, skills and attitudes through a planned programme of learning experiences in education and training settings which will assist students to make informed decisions about their life, study and/or work options and enable effective participation in working life (MCEETYA Career Education Taskforce, 1998) cited by (Patton, 2001b, p. 2).

The Taskforce went on to explain that career education needed to encompass four aspects:

- Learning about the world of work (paid and unpaid) and its changing nature, its place in the Australian culture, the general expectations of employers and the demands of the workplace;
- An understanding by individuals of themselves including their interests, abilities, weaknesses, desires and values;
- An understanding of the decision making processes which can be applied in choosing careers; and
- Acquisition of the skills necessary to implement the decisions made.

This explanation of career education was not a very significant departure from the Career Education in Australian Schools report definition of 1992 (Australian Education Council, 1992) which was used in the national collaborative curriculum work and was seen as one of the cross curricula themes which influenced the development of the eight learning area statements and profiles. The report saw career education as being made up of four strands:

- Learning about self in relation to work
Students identifying and understanding their personal attributes, interests and values; exploring links between personal attributes and competencies required in different work situations.
- Learning about the world of work
Students exploring the world of work and its changing nature (paid, unpaid and voluntary); experiencing and researching

different work roles; exploring educational and training opportunities.

- Learning to make career plans and decisions
Students understanding decision making processes; investigating career options and exploring the range of pathways.
- Implementing career decisions and managing work transitions
Students acquiring skills needed to implement career decisions; developing independence and confidence in accessing on-going education opportunities.

In the UK and in reports from the OECD (2004a), career education is described in

...terms such as ‘vocational guidance’, ‘vocational counselling’, ‘career counselling’, ‘information, advice and guidance’ and ‘career development’ are used to refer to the range of activities that is included here within the term career guidance. In this report career guidance encompasses all of these, and no attempt is made to distinguish between them (p. 18).

Whilst there were a large number of reports in Australia from the early 1990s until 2000 that considered career education, very little work was done to give effect to any policy recommendations. In some instances the little career education resource that was available was diverted in its attention to the implementation of vocational education and especially in schools to the VET in Schools program. Smyth, Zappala & Considine (2002) point to the lower retentions in Australia compared to most OECD countries as an indicator “that the pathways from school to work are not clearly visible or easily constructed” (p. 21). The Dusseldorp Skills Forum working in concert with the Career Education Association of Victoria commenced a program in 1997 to redress this by conducting a series of professional development seminars CEAV & Dusseldorp Skills Forum (1997). *Pathways* in the report from the seminars are discussed in terms of entry-level linking the world of work with schools in fording the transition divide. A series of workshops in each state and territory

followed. The resulting outcomes were published by the CEAV (Harrison, 1998). This report highlighted the need for career education practitioners to see the role of the career teacher differently. The report became an action plan aimed at changing the way career practitioners saw themselves and this, in part, is indicated by the title of the publication – Linking Career Education and School Workplace Learning Pathways. *Pathways* was identified as part of Outcome 1: “Strengthening links between career education and work, employment and training pathways” (Harrison, 1998, p. 33). The CEAV was also instrumental in the development of a voluntary framework for schools to assess the nature of their career education programs (Willett, 2001).

Watts (1993) has consistently put forward the economic arguments for providing career education (guidance). The rationale given was one of economic efficiency, social equity and sustainability (Watts, 2000). He was involved with the CEAV in developing its program, having initially been a keynote speaker at the CEAV 1995 conference (Watts, 1995a). Watts’ arguments also assisted bridging the academic and vocational divide which arose with the initial AVCts pilots and early implementation polarising debate amongst careers practitioners. The key role for the post compulsory sector in career guidance should be “providing feedback on learners’ needs which are not met by existing provision” (Watts, 1993, p. 3).

2.8 CAREER PROVISION

2.8.1 ACROSS INTERNATIONAL BORDERS

Bezanson & Kellett (2001) citing Watts (1995b) highlight the major trends from the 1990s in relation to career information and guidance as a more open professional model is emerging: there is a greater emphasis on the individual as an active agent and that career provision is being viewed as a continuous process. (Watts & Sultana, 2003) comment on the findings of three reviews of career education by the OECD, the World

Bank and the International Association for Educational and Vocational Guidance on 36 countries that despite “the dynamics of globalisation, together with ‘policy borrowing’, [these forces] have led to a great deal of convergence.” (p.8). They claim there is firstly an increasing need to view career guidance services as a system (it is currently not viewed this way), secondly to view career guidance in more proactive terms and thirdly to recognise the active participation of the individual in a process of career guidance.

The findings of a review of career guidance in 14 OECD countries (Australia, Austria, Canada, the Czech Republic, Denmark, Finland, Germany, Ireland, South Korea, Luxembourg, the Netherlands, Norway, Spain, and the U K) started in 2001 state that “Too often career information is provider-driven rather than user-driven” (OECD, 2004a, p. 83). “This gap is an illustration of two more general points: that educational information is often better-developed than occupational information; and that these two forms of information are often only weakly linked” (OECD, 2004a, p. 90).

The Report goes on to comment on the need for institutions to refocus their efforts.

Increased competition between institutions for students and for resources leads to the labour market outcomes of their graduates becoming a key marketing feature. It also leads institutions to become aware that their graduates’ employability and career-management skills can be an important way for them to market themselves both to potential students and to employers....As institutions and courses become more diverse, and as enrolments in courses that are not narrowly linked to specific qualifications grow, links between tertiary education and the labour market become more diffuse and complex, increasing the need for more sophisticated ways to link graduates to post-graduation employment. Thus the need for career guidance services increases at the point of entry to tertiary education, during it, and at the interface between it and the labour market. This calls for a comprehensive approach.(OECD, 2004a, p. 52)

As part of the OECD review a number of background papers were produced by Bezanson & Kellett (2001); McCarthy (2001); Plant (2001); and Watts (2001). Bezanson & Kellett (2001, p. 4) in summation of their findings from the 14 countries, state that

...there are gaps and overlaps in the career information and guidance services. Availability is uneven. Few countries, it seems, have coherent policies, systems and delivery structures for career information and guidance that support transitions across the span of life, learning and work.

Bezanson & Kellett (2001, p. 8) have pointed to the Canadian experience of emphasizing “individual responsibility and self-sufficiency or autonomy in career development.” This in part addresses what they describe as the two major hurdles to overcome at a national and local level: “efficiency” and “gaps in service”. One aspect of recent career developments in both the USA and Canada has been the emergence of the *Blueprint for Life*. The Blueprint is intended to “clarify outcomes”, provide “service consistency,” “efficiency”, “reduce ambiguity” and develop a “career development culture” Jarvis (2001, p. 6).

Watts (2001, p. 3) outlines the possible uses of technology to address gaps in career service provision and comments on the issues of “accessibility”, “interactivity” and “origination” (quality assurance and authenticity of what is produced and can be posted on the internet). He also cites Sampson et al and comments on “three levels of service delivery”; “self-help”, “staff-assisted” and “individual case-managed” services relating alternatively to those clients, who are at a “high”, “moderate” and “low” levels of career readiness (p. 5). The implications from this paper are that the development of quality standards is going to be increasingly important to policy makers wanting to use information and communication technologies (ICT) to increase and broaden career service provision.

2.8.2 AUSTRALIAN EXPERIENCE BY SECTORS OF EDUCATION AND TRAINING

There have been a number of recent reports in Australia which have examined career service provision and support. The key report is known as the Eldridge Report (Prime Minister's Youth Pathways Action Plan Taskforce, 2001). This Report examines the quality and availability of career advice and transition support. It advocates the development of a support structure through local partnerships and also the development from Year 8 upwards of Learning Pathway Plans for students.

In a policy context the State and Territory Education Ministers agreed at a MCEETYA meeting in March 2000 to a *New Framework for Vocational Education in Schools* that identified five elements (Employment-related skills, Enterprise Education, Career Education, Work-based learning and Community-based learning). At this meeting the ministers resolved to develop an online career system. The federal government also identified career education as a priority and announced an \$A24 million initiative *Enterprise and Career Education Program* to be spent over four years (2000/01-2003/04) to develop a more co-ordinated career education provision. The development of the online site www.myfuture.edu.au was one aspect of this. The program was also to borrow heavily from the Canadian career education experiences with products like *The Real Game* series (Department of Education Science and Technology, 2004b) and the *Blueprint for Career Development* crossing the Pacific to be reproduced in Australian editions.

One of the consultant reports to the OECD Review points out that “well – organized career information, guidance and counselling are particularly important in post-compulsory education” (OECD, 2002b, p. 3). To this end it is advocated that such a system would reduce dropouts and back-tracking; improve flows between levels of the education system; and progress transition to the labour market. The report concludes that achieving this would be better for the individual and for society by improving outcomes.

In TAFE institutes, career provision is usually offered in conjunction with Student Services support. A Department of Education Science and Technology (2002a, p. 97) report records that for TAFE “career counselling is provided as a part of the broad counselling services of the institutes.” For higher education the AVCC addressed the issues of career pathways and career provision in December 2002 in a statement of principles applying to Australian universities (Australian Vice - Chancellors' Committee, 2002). The section of this document on Support for Students, paragraph 21, states “universities should provide support services for students at key transition points between education sectors or levels”, and in paragraph 23, “identify employment options, and assist with career counselling”. It should be noted there does not appear to be an obligation on students themselves to take a responsibility in this regard.

The OECD Country Notes on Australia document that

Another recent curriculum-related development in a number of universities has been the introduction of portfolio systems – these parallel in many respects to those being developed in schools ...– under which students are required to record not only what they are learning in content terms, but also the work-related competences they are acquiring through learning it. (OECD, 2002a, p. 11)

The Graduate Careers Council of Australia (GCCA) develops information resources and has conducted annual graduate destination surveys for some time. A selection of this information is used by several universities in connection with course reviews.

A paper by McMahon, Patton, & Tatham, (2003) which outlines a range of issues is to be considered in the development of an Australian edition of the *Blueprint for Life*. This paper advocates the advantage of such a ‘Blueprint’ as providing “a means of mapping, unifying and coordinating service provision” (p.14). Jarvis (2003) outlines the development of the

Blueprint for Life in the USA and Canada and summarises the competencies and performance indicators. An interesting aspect of the development of The Real Game series has been the internationalisation of this product with the original Canadian edition now having been adapted in ten countries (including Australia) (Department of Education Science and Technology, 2002b). The original *The Real Game* was developed by Bill Barry in response to complaints by his daughter that what she learnt in school was not useful. There are six games in the series which explore education and post school life, one of which is aimed at adults.

Currently a number of projects are being developed by Miles Morgan Australia including Australia Career Development Studies, the Australian Blueprint for Career Development, and National Standards for Career Practitioners. Draft materials have been put out to careers professional organisations for consultation purposes (Miles Morgan Australia, 2005). The range of materials and projects (most of which have been commissioned by DEST) will provide a comprehensive array of career programs in Australia and will implement the Ministers' decision at MCEETYA. At least one state, Tasmania, has commenced the development of a policy which is cross-sectoral in nature (Department of Education, 2003).

2.9 CAREER PATHWAYS

2.9.1 MORE THAN A VERTICAL OR HORIZONTAL PROCESS

As was suggested earlier the use of the term *career pathway* is more than a description of the structure of vertical progress through the education and training system. In Australia a number of terms are used to describe essentially the same concept. The Training Reform Agenda of the early nineties with its plethora of reports increased the currency of this terminology. The Finn Committee (Australian Education Council, 1991) used *pathways* in a vocational context. The Carmichael Report

(Carmichael, 1991) used *career path* and *career structure* in an interchangeable way. Others have given the term their own interpretation. Kennedy, Cummings, & Catts (1993) describe it in relation to skills and knowledge for a specific occupational area. Wiltshire (1993, p. 40) uses the term to describe a “mapping of the numerous tracks through the myriad courses in the post-compulsory educational system towards life skills and employment.” Robinson (2004) uses the term to describe “student performance” and to discuss “individual enrolment changes and their timing in the longitudinal process of progression through a degree course” (p. 2). Keating (1994) concluded that “the idea of pathways has been something of a catch-all to describe students’ progression via different routes to post-school goals” (p.28).

In the early 1990s two state education departments (Western Australia and South Australia) used the notion of pathways to describe broad groupings of subjects at Grade 11 and 12 in relation to careers. This coincided with the development of the Australian Vocational Certificate Training System (AVCTs) and its implementation in the senior secondary years of schooling. The New South Wales Education Department at about the same time described four broad routes through Grade 11 and 12 from general education to VET with varying elements of articulation and as such it formed the basis of providing career guidance (Calvert, 1994). In this sense the term was being used to both describe structural arrangements and provide direction for students through the education and training sector divide. In 1999, MCEETYA National Goals for Schooling (the Adelaide Declaration) restated the need to ensure career pathways for students leaving school, as a means of bridging school and work in Goal 1.5:

...have employment related skills and an understanding of the work environment, career options and pathways as a foundation for, and positive attitudes towards, vocational education and training, further education, employment and life-long learning (MCEETYA, 1999, p. 2).

In 2002 the MCEETYA Council meeting endorsed a declaration 'Stepping Forward – improving pathways for all young people' (MCEETYA, 2002). No detail was spelled out about what was meant by *pathway*, this was to come a year later with an Action Plan (MCEETYA, 2003). The plan identified “education and training as the foundation leading to pathways” as one of five areas for action. The plan revisited the concept of “seamless pathways” and envisaged work occurring on “key episodes when decisions are made” (p. 7) or at entry and exit points of education and training. In 2003 the MCEETYA Council meeting adopted the Career and Transition Services Framework (MCEETYA Taskforce on Transition from School, 2003). This document refers to a goal to assist students “to develop career planning skills, enabling them to effectively manage their pathways beyond school” and to “connect education and training pathways with career choices and employment prospects (including self employment)” (MCEETYA Taskforce on Transition from School, 2003, p. 2). Students are required to develop a learning pathways plan in their first year of secondary school. It is intended to link this with monitoring and tracking using an IT based system. Local Support Networks will assist the development of “pathway plans with young people and their families”(MCEETYA Taskforce on Transition from School, 2003, p. 7).

In England in the early 1990s there were similar changes occurring with the introduction of the National Curriculum and the development of the school- based General National Vocational Qualification (G.N.V.Q). The term *progression* was used instead of *career pathway*. Morris (1993) describes how such arrangements were to work in the Unified Curriculum Project and outlines a number of possible case studies. Watts (1993) was to note at about the same time the slight change in the meaning of *career* away from describing a job in a particular field (e.g. a career in Engineering) but rather being used to describe a process attaching to the individual and as “a process, to describe an individual’s lifetime of learning and work” (p. 2).

The OECD Review of 2004 does not discuss in any detail the term *career pathways* but it is indirectly referred to within the recommendation: “OECD countries need, then, to work towards the development of lifelong guidance systems”(OECD, 2004a, p. 17).

An examination (early in 2005) of the major websites aimed at international fee-paying students, namely Australian Education International (AEI), Australian Qualification Framework (AQF), International Development Program (IDP) and Study in Australia, highlights an inconsistency in terminology. The terms *career path*, *career pathway*, *learning pathway*, *pathways* and *training pathways* are variously used (Table 2.9-1). Only one site, IDP, associates careers in a broad sense with possible employment outcomes. But even here there are no sample career pathways provided of how this might be achieved. The AEI produce a booklet (Australian Education International, 2001a) which both includes a diagram of the structural nature of the education and training system in this country and also includes six possible student pathway case studies (see Figure 1.5-1 Entry 1, 5, 6, 7, and 10). This booklet was updated in 2004 (Australian Education International, 2004b) and includes some sample career possibilities in relation to *learning pathways*.

Table 2.9-1 Pathway Terminology

Terminology	AEI	AQF	IDP	Study in Australia
Career path			✓	
Career pathway				
Learning pathway		✓		✓
Pathways	✓			
Training Pathways		✓		

Source: Relevant Websites – AEI (Australian Education International, 2004a), AQF (AQF Advisory Board, 2002b), IDP (IDP Education Australia, 2004b), Study in Australia (Australian Education International, 2004e)

2.9.2 PATHWAYS AS MULTI-TRACKS

Smyth, Zappala & Considine (2002) caution against what they see as an outdated linear concept associated with the Finn metaphor *pathways*. Others have been attempting to describe pathways as anything but linear in nature, including Keating (1994, p. 51) who makes reference to “three idealised models relating to 16-18 education-binary (dual), multi-tracked and unified (comprehensive)” and Raffe (1993) who discusses what he describes as “multitrack systems”.

Some of the inherent difficulties of the term *pathways* are that for some it highlights the educational divide between academic and vocational programs (Morris, 1993) whilst for others both research and the literature relate to early school leavers, and pathways have been used as a tool of retention to encourage students back into schooling. Smyth, Zappala & Considine (2002) soften their opposition to the term by re-defining it to describe “the vocational focus and occupational focus [as] compatible with the ‘normal’ linear biography and the contextual, altered and mixed focus are compatible with the ‘choice’ biography” (p. 3.)

Brown, Moerkam & Voncken (1998) in their discussion, point to teacher and student attitude as being the key to students undertaking a particular pathway. In examining the education systems of Germany and Denmark as a background to the OECD Review Bezanson & Kellett (2001) describe the dual system of these countries as being “transparent, with pathway entrance requirements, procedures, and outcomes that are clear and well-known to students, parents, teachers, workers, and employers.” (p. 16.)

2.9.3 FACTORS AFFECTING CAREER DECISIONS

Patton comments on the significance of family in the career decision-making process and observes “choosing a career is not an objective process and does not occur in a vacuum; it is intricately linked to the contexts, family, social, national and global, in which individuals operate

and in which the process of career development operates”(Patton, 2001a, p. 9). The (National Board of Employment Education and Training, 1995) also considers the impact of the family in its report on students and attitudes towards careers. Their conclusions were that “For students from families without high levels of education, parents’ advice often seems to augment, rather than to clarify, the confusion about desirable education and training pathways” (p.16). This study reports the crucial link as being between the family and socio-economic backgrounds, in that “highly educated families understand how the ‘system’ works” and “families with less experience of formal education are more likely to be confused by the array of options” (p. 16) with respect to decisions of further education and training.

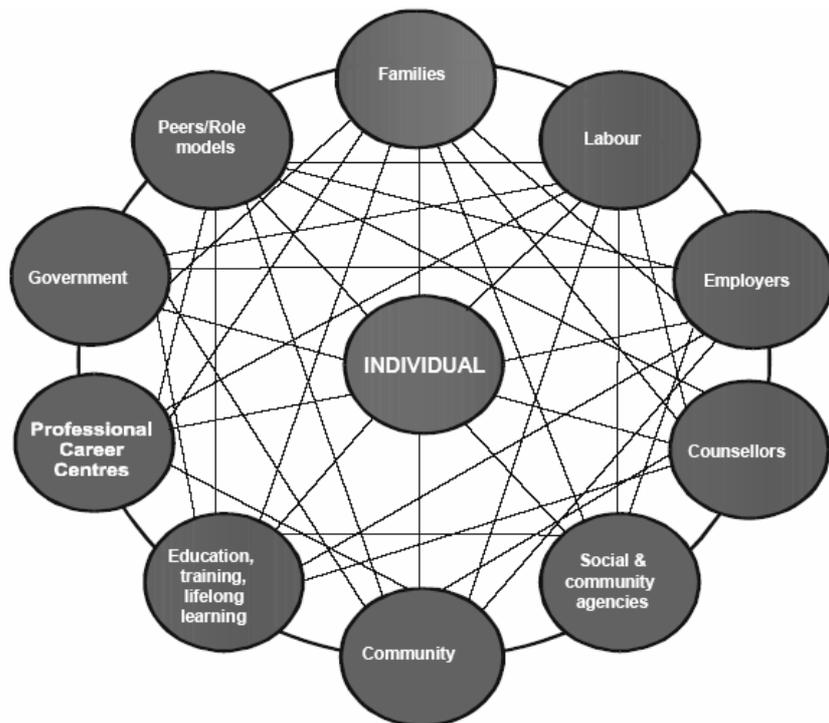


Figure 2.9—1 Stakeholders in a Career Information and Guidance System

Source: Bezanson & Kellett (2001, p. 10)

The impact of stakeholders has been portrayed by (Bezanson & Kellett, 2001, p. 10) in Figure 2.9-1 based on work done by the Canadian Labour Force Development Board, 1994. In such a system represented in Figure

2.9-1 the various stakeholders would complement each other. Bezanson & Kellett go on to outline the respective roles that would be played by all stakeholders. In reaching a conclusion they recognise that career practitioners could play a role of reaching out to other professionals such as welfare workers, to mentor these professionals in improving career guidance delivery.

2.10 RESEARCH ON INTERNATIONAL AND CAREER EDUCATION IN AUSTRALIA

A search of the Australian Clearinghouse for Youth Studies - Abstract, Australian Education International – Database of Research on International Education and National Centre for Vocational Education and Research (VOCED) data bases was conducted in January 2005. The key words/terms *international students*; and ... *career paths, career pathway, careers, learning pathway, pathways, and training pathway* were selected. The result is indicated below in Table 2.10-1.

Table 2.10-1 Database Search

Words/Terms	Source	Records
Career paths	AEI Database of Research	5
Career Pathway	AEI Database of Research	0
Careers	AEI Database of Research	15
Learning Pathway	AEI Database of Research	0
Pathway	AEI Database of Research	19
Training Pathway	AEI Database of Research	0

No results were found in any category on the Australian Clearinghouse for Youth Studies and VOCED databases. Additional searches were conducted on Google Scholar and the International Labor Organization – LaborDoc databases with limited success.

International education research in general is characterised by

- Adjustment to the Australian context, Byrom (1998)
- Client satisfaction, (Australian International Education Foundation, 1996), (Australian International Education Foundation, 1998b), (G Smith, Lambert, Knox, Morey, & Foster, 2000)
- Comparative studies between domestic and international students, (Chalmers, 1994)
- Language acquisition, (Hawkins & Bransgrove, 1998)
- Learning Styles and academic performance/academic acculturation, (Bird & Welford, 1995), (Ramburuth, 2001)
- Program evaluation, (Erskine, 2000).

Wheelahan (2001a) presented a paper at the 15th IDP Conference in Sydney in 2001 examining how international fee-paying students entered university through what she described as a “front-end model”. She reminded readers that five of Australia’s universities are also dual sector universities with VET elements. Five models of entry were identified: standardized pathways; customized pathways; guaranteed pathways; enhanced pathways; and credit mapping compared to block credit. Comments were made on the findings of research in 2000 of a sample of 50 Victoria University of Technology (VUT) students who articulated from TAFE in 1999 to higher education in 2000. Of the sample, 50 percent planned a course of study based upon articulation. “Most students found navigating through the transition reasonably smooth, but had high levels of support” (Wheelahan, 2001a, p. 16). In conclusion she highlighted the lack of a national “lifelong learning policy” and as a consequence each sector was developing approaches in isolation. Haas (1999) also considered the five institutions that are both VET and higher education institutions. He examined how these institutions have developed policies in relation to articulation arrangements. Wheelahan

has produced other papers Wheelahan (2000; 2001b; 2004) examining the “cross sectoral education policy divide”.

In a career education context there have been studies on how well students ‘transition’ into university. Walck & Hensby (2003) considered the factors impacting on a lack of career decision readiness including the lack of appropriate resources. Family, at 55.7 percent, was identified as the major source of advice. Findings were that “for many prospective students there is a strong pressure to make a decision at the time of applying to go to university, rather than to necessarily make a well-informed choice of career direction” (p. 69). They go on to caution interpretation of the results and suggest that a longitudinal study tracking outcome from study to employment may be needed to further these findings.

A longitudinal study has been conducted into occupational pathways choice of Australian school students using a sample of $n = 1,201$ (Athanasou, 2002). An assessment of occupational choice occurred over a seven year period. There was a significant depletion rate from the study (only 21% of the initial sample was still involved after seven years). Significant for this study is the conclusion “vocational interests may have to be sacrificed in order to accommodate other factors, such as educational achievements, natural abilities, personal or social issues, and available opportunities” (p. 84). Athanasou concludes by saying “a disturbing aspect of these results for career practitioners, however, is that the modern workplace may not allow high school pupils to fulfil their vocational interests and may encourage instability in their career pathways” (p. 85).

2.11 STUDIES ON COHORTS OF INTERNATIONAL FEE-PAYING STUDENTS

In general, studies are characterised by considerations of

- Adjustment to the Australian context, Mezger (1998)
- Client satisfaction, Victoria Office of Training and Further Education - Marketing Export Branch (1993)
- Learning Styles, Meggitt, Tourkey & Singh (1995).

Patton highlights the broader issue of the need to conduct research into the variables influencing career education for the total student population:

We need to conduct major longitudinal studies of the transition from school to work, focusing on the nature of the transition (e.g., tertiary programs at school to university; school based apprenticeship through to degree), the relationship between the type of program and career related variables, and the role of career education in the career development of these young people experiencing different pathways. (Patton, 2001a, p. 16)

The family was identified in the AEC 1992 report as an important resource to career education. “Families play a key role in providing career advice particularly when they are given opportunities to become aware of such things as available career pathways, the changing requirements of the work place and effective techniques of career decision-making” (Australian Education Council, 1992, p. 10). Given that the family is often identified as a key variable in the career making decision, the input of the family into the decision of an international student studying abroad, despite their lack of immediate presence in Australia, requires further examination.

2.12 SCIENCE AND ENGINEERING AS A PATHWAY

For the year the questionnaire in this study was distributed to the sample of international fee-paying students, Engineering numbers in the 2003 calendar year grew by 21 percent for the Higher Education sector and 21.4 percent for the VET sector compared with 2002. Computer Science

Table 2.12-1 Science and Engineering International Student Data 2003

Field	Higher Education	VET	Total
Computer Science & Information Systems	23,133	11,488	34,621
Engineering	12,043	9,676	21,719
Science	4,350		4,350
All Others	96,726	36,162	132,888
Total	136,252	57,326	193,578

Source: (IDP Education Australia, 2004a)

and Information Technology grew by 7.8 percent in the Higher Education sector but declined by 18.1 percent in VET. Science figures grew by 22.5 percent in Higher Education whilst specific figures are not available for the VET sector in Table 2.12-1. In general, in the Higher Education sector, the greatest growth degree area was in Masters by Coursework. This degree program grew by 26.5 percent. Bachelor programs grew at 14.5 percent for 2003 compared with 2002. Dobson (2003) has considered Science enrolment patterns in general from 1989-2002. He has noted the definition changes of the DEST classification of the Science field of study post 2001. From analysing the DEST data he has observed considerable changes in the pattern of enrolment especially in IT (Table 2.12-2).

Table 2.12-2 Growth by Percent Science and IT Compared with Other Fields of Study 1989-2002

Field of Study	Domestic Students %	International Students %	Total Growth %
Science	32.7	107.4	37
Information Technology	193.8	2293.3	342.2
Science & IT	68.1	674.2	104.8

Source: Adapted from (Dobson, 2003)

Table 2.12-3 Science and Engineering Fields of Study Compared with Major Competitors by Proportion of Total Higher Education Enrolment for Most Recent Year (2003-04)

Field of Study	Australia %	USA %	UK %
Computer Science & IT	17	12	15
Engineering	11	17	9
Science	2	8	2

Source: AEI (2004c), British Council (2005), IIE (2004)

Computer Science and IT are significant to Australia and the UK higher education sectors, whilst Engineering is more important in the USA (Table 2.12-3). The data partly reflects the practice that a top international Engineering or Science student would choose the USA first and the UK or Australia second in making a destination decision. The viability of many Science and Engineering tertiary programs is enhanced by the presence of international students. Baker et al., (1996) conclude that “Overseas students contribute to the Australian research effort through funded research in fields where there may be insufficient numbers of [local] postgraduate students, such as science and engineering” (p. 91).

Follari (2004a) examines the relative costs of studying degrees in Bachelor of Engineering, Information Technology, Masters of Engineering and IT. His findings were that Australia was competitive as an international study destination against the UK and USA except for Engineering. The UK Bachelor of Engineering program is usually three years (Australia four) and the Masters of Engineering programs one year (Australia two years). Australia in general is not as competitive against emerging Asian destinations, whilst post graduate studies are not as competitive because of the length of our courses.

(Follari, 2004b, p. 1) also concludes that

Australian education institutions seeking to attract international students will need to strongly focus on the quality and global recognition of the qualification they offer, the international career opportunities that come from studying in Australia and the employability of their graduates[and not] simply on price alone.

The (National Board of Employment Education and Training, 1995) citing earlier work, describes four types of students in relation to post school options: those that are career-determined; career-confident; career-confused; and career- condemned. Career-determined have made up their minds from early schooling, career-confident stay at school, optimistic that all will turn out well, career-confused respond to pressures from home, and career-condemned are early school leavers. Career pathways would appear to relate to the first three groups.

2.13 SCIENCE AND ENGINEERING STUDENTS AND CAREER INTENTIONS

There have been reports from a number of OECD countries of a decline in the numbers of students studying Science and Mathematics at both school and university level. In Australia the federal government has embarked on a \$A 8.3 billion ten year program (from 2001-2 to 2010-11) to redress this under its ‘Building Our Future –Through Science and Innovation’ program (Department of Education Science and Technology, 2004a). Davis (2004) points to “the need to liberate science and mathematics teaching from rigid preoccupations about what needs to be learned, in what sequence and when” (p. 3).

McInnis, Hartley & Anderson (2000) conducted a study of recent Science graduates (including Physical Sciences, Mathematics, Life Science, Psychology and Information Sciences) and employment outcomes. The methodology included surveys (n = 1245) from six Australian

universities, online responses (n =106) and telephone interviews (n = 32). The study was longitudinal in the sense that 37 percent had completed their degree up to six years before the compilations of the findings. Of the total sample group 80 percent were working full time. The findings with regard to the graduates' current positions were

in terms of career path, with 41 per cent describing it as a 'desired career position' and 44 per cent who see it as a 'stepping-stone to a desired position'. Only 15 per cent [of the sample] regarded their jobs as an 'interim' or short-term prospect (p. viii).

Some of the sample related to international students but no specific findings are given in relation to international students and career pathways in Science.

Steele-Alson & Whitelaw (1992) undertook an investigation into Science education students. Their findings were that 55 percent of BAppSc. students undertook Science because of interest, over 90 percent said that they needed career information in high school but did not receive it, existing career information was poor, and attrition rates and 'at risk' students were identified as females, country and international students and students from non-professional backgrounds. Chriddenden (2003) also considers university students and expected attrition rates from universities in the light of their perceived "readiness and ability to cope with first-year studies at university" (p. 41) as a consequence of their Year 12 preparation for tertiary studies.

Lane, Dietz, Chompalov, Bozeman & Park (1999) investigated the career paths of Scientists and Engineers by using the methodology of analysing curriculum vita. However difficulties with this methodology were encountered in interpreting curriculum vitae (CV); recent graduates used such documents as a marketing tool and for some established in their career the CV were used as an historical record. They acknowledge that

“Careers are inherently dynamic-evolving and intersecting in planned and unplanned ways...” (p. 9).

Inkson & Carr (2004) have examined the intersection of careers, globalisation and migration, and described this process as “talent flow” (in vernacular language ‘brain drain’), and considered the beneficial effects of an overseas experience. This phenomenon has a particular relevance to the professional occupations in the Science and Engineering field.

A 2001 Asiaweek Magazine report highlighted the lack of students studying IT in Asia (the article included Australia in its definition of Asia). In the identified 20 leading universities there were less than 50,000 students studying IT. Of these universities five were in Australia with Monash University having the largest enrolment of 5,556 students (Bacani, 2001).

Leong (2002) considers what he describes as “cultural accommodation” and the impact of the transferences of western ideas of career counselling and the potential impact of these on Asian countries. Lent & Worthington (2000) also discuss whether career development theories, in relation to school-to-work transitions are culturally sensitive. These aspects will be considered in more detail in Chapter 5.

A number of studies have been conducted into why fewer females undertake Science, Mathematics and Engineering compared with males. Wei-Cheng (2003) considers the factors that potentially impact on students aspiring to a career in these subject fields, and a longitudinal study of career trajectories into the subject field (with a sample $n = 41$) has been conducted by Wai-Ling & Nguyen (2003) will be discussed in Chapter 5.

2.14 MEASURING ACADEMIC SUCCESS IN RELATION TO CAREERS

A number of studies consider the factors that impact on academic success and careers. Motivation, assessment standards and school curricula have been considered alternatively by NBEET (1995), Navaratnam (1992) and Yeung & Yeung (2001). The main factors identified by NBEET were “Students’ motivation and morale have a strong impact on their achievement at school” (National Board of Employment Education and Training, 1995, p. 16). Navaratnam considered assessment and standards at six Institutes of TAFE. The findings concluded that there needed to be a revision of current practice to support articulation arrangements between TAFE and higher education, and further RPL arrangements developed.

Yeung & Yeung have conducted research with a sample of 199 Grade 7, 9, and 11 high school students in Hong Kong in relation to motivation and career aspiration. Their findings were that Grade 7 students had a higher career aspiration than other grades and suggesting that “the school curriculum needs to be improved to become more relevant and practical to the students’ daily lives and to their future job seeking” (p.9)

Paewai & Meyer (2004) considered the academic performance of international students at selected secondary schools and tertiary providers in comparison to domestic students. The findings for secondary students showed that performance compared favourably but there were difficulties with data collection for tertiary students which made conclusions difficult to reach.

In relation to the total population (Power, 1988) links participation rates of students continuing their education with flow analysis. In this context the “origins of the inflows” and “the destination of outflows” students completing their studies for “working life” can be compared (pp. 153).

Elsewhere such an analysis has been reported, according to Power to analyse a cohort of students.

2.15 THE SIGNIFICANCE OF UNDERTAKING THIS STUDY

This study is timely given the attention by the OECD to career education and to the contribution of transnational education in recent years. There is a "... need for more market research on people's career guidance needs and on where and how these needs are currently being met" (OECD, 2004a, p. 128). The methodology of this study is consistent with recent suggestions of focusing on the individual with international fee-paying students who now are a sizable part of the Australian education and training population. It adds to the body of work on the transition or pathway through education to the post education domain.

(Smith R. 2004, p. 2) advocates that academics should "become involved in research on practice amongst your local community of learners". More research into this significant proportion of Australia's student population in part can offset any impression that through internationalisation, institutions are only really interested in revenue raising. (Garnaut, 1989, p. 256) notes that "The Jackson Committee recommendations on promotion of Australia as a place for education of foreign students on a fee-paying basis was deeply shocking to many in the Australian education establishment, including the Commonwealth bureaucracy." He goes on to note the importance of quality control. "The conduct and performance of any one Australian educational institution affects the expectations of potential students and their families about the conduct and performance of others" (Garnaut, 1989, p. 261). Bezanson & Kellett (2001, p. 36) acknowledge "that too little is known about the impacts of career information and guidance services on the quality of transitions people make into and out of learning and work."

The study also builds on the work of others that have examined the contextualisation of learning in the workplace Boud (1998, 1999) and Boud & Middleton (2003). Boud (1999) discusses the value of using “reciprocal peer learning” (p. 3). Aspects relating to this are dealt with in Chapter 3 in the discussion on Participatory Method. Boud (1998) discusses the nature of workplace learning in Australia and advocates possible research that needs to be undertaken. This arises as a consequence of the developments outlined earlier in this Chapter about the emergence of a seamless education and training system for Australia.

This study contributes to both international and career education by exploring pathways into Science and Engineering taken by a cohort of international students. This sample participated by responding to a questionnaire. A subset of this sample was then interviewed to clarify the reasons for the career decisions that they have made. This study increases our knowledge of international students and course selection factors, potential career aspirations and attempts to challenge what Watts (1993) describes as “the (often false) assumption that students have already committed themselves to particular career paths by their choice of (vocational) course” (p.3).

2.16 SUMMARY

International education is a very significant service industry, involving a major global flow of millions of students into largely English speaking countries. The considerable Australian participation is very much influenced by the forces of globalisation as the industry is very finely attuned to the activities of other major competitors. Despite the significance of the international education industry very few studies have been conducted that relate to student decision making with respect to courses and career aspirations.

The development of international education and its intersection with how students move through the Australian education and training system has not previously been explored in detail. This study discusses the interplay of international education and career pathways in order to better understand how this process occurs. To this end, *pathway* not only implies a variety of movements vertically but also horizontally. In the light of a recurrent theme from the OECD background papers, a better organised, more coherent approach to pathways might not only assist international fee-paying students but also Australian domestic students. An intended outcome of the study is to increase understanding of the level of familiarity which international students have of the Australian education and training system, and to examine how they move through ‘the system’

In the following pages, the scale and nature of the industry will be outlined by analysing enrolment statistics, and there is a brief overview of the regulation surrounding the industry which has grown both beyond the shores of Australia and beyond international fee-paying students to diversify, and now includes a range of products and offerings. One important aspect of these developments has been to strengthen the internationalisation of education. In concert with the review of literature on international education, there is also a consideration of developments in career education both in Australia and internationally, especially in an

OECD context. This should assist us in understanding the use of the term *career pathways* as well as providing a backdrop for consideration of the factors that may have impacted upon international students in making their career and course decisions.

Chapter 3

METHODOLOGY

3.1 INTRODUCTION

This Chapter outlines the nature of the methodology used in this study and there is a discussion of the databases accessed for the literature review. One aspect of the methodology was to use a participatory method, hence the nature of this method and how it contributed to the development of this study is also discussed. Approaches were made to various bodies, individual students, international advisors and professional associations relating to Science and Engineering and the interactions with these groups are described.

A consideration of the population data associated with the numbers of international fee-paying students in Australia and some other key markets is included in the Chapter. The source of this data and the numbers of students involved is explained and the development of a survey instrument, its trialling, consideration of sample size and approach to institutions is also outlined. Issues associated with the finalisation of the implementation of the survey instrument are considered and the data from the instrument is augmented with that from the interviews of a subset of the total sample. Finally the reasons for this approach, the nature of the interview questions and the outcomes are discussed.

In planning and developing this study there was an attempt to engage others in the methodology through a participatory approach (Wadsworth, 1998). To this end, professional bodies associated with the Science and Engineering fields of study were contacted along with the NLC, the peak body representing international students in Australia, and a number of student advisors (members of ISANA). These contacts were not only intended to generate publicity about the project but were also intended, through collaboration, to enrich the scope of this study.

A considerable period of time was spent in the development, evaluation and implementation of a survey instrument. This instrument was critical to this project in that it gathered the required data about international students studying Science and/or Engineering. As the first language of members of the target population was not English, it was important to develop an instrument that avoided ambiguity and expressed ideas in a simplified way. As a consequence, there was the need to evaluate, refine and modify items and timelines were adjusted accordingly. Further data was also gathered as a result of interviewing a sample of those who had completed the survey.

As this study involved a population of international students there was the intent, at the outset to progressively share the outcomes of this study with a network of institutions and individuals both in Australia and overseas. To this end two papers were presented to offshore audiences in Taiwan (Calvert, 2000) and in South Africa (Calvert, 2003). The sharing of this study's progress in overseas locations with other educators also provided the opportunity to enhance sensitivities to its cross-cultural dimension by ensuring that what might be considered as Australian ideas and concepts were appropriately explained and understood by a wider audience.

3.2 LITERATURE REVIEW

I conducted two periods of significant database searches for literature on international students and career education: 1999-2000 and January-February, 2005. Both general and subject-specific databases were accessed in Australia, while internationally, the Education Resources Information Centre (ERIC) was accessed (Appendix 3, Table 3.1). The initial searches in 1999 were very general in nature and became more specific in 2000 when the study topic was refined and finalised.

In an Australian context, the general databases accessed included the Australian Education Index, Australian Public Affairs Information Service (APAIS) and Current Contents Connect. The specialised

databases accessed relating to the field of study were the Australian Education International Network – Database on Research on International Education, Australian Youth Studies Clearinghouse-Abstracts (encompassing some material relating to career education) and VOCED (also accessing international studies in vocational education and training).

In addition to ERIC, Google Scholar beta (as a general survey) and the International Labour Organization – Labordoc (specialised search) were undertaken. The Labordoc search focussed on the ILO ‘transition to work’ resource collection.

The initial search (Appendix 3, Table 3.2) covered the following key words and terms: *International students and Australia, study, learning*. The search of ERIC revealed that the more appropriate term to access was *foreign students* rather than *international students*. Other words and terms accessed on ERIC were: *International education, college curriculum, foreign countries, higher education*. Additional terms accessed were: *International students (foreign students) plus: career pathway; pathways; career awareness; career choice. Foreign students plus: career; school guidance; occupational aspiration; career ladders; career awareness*.

The broader search became more specific in late 1999 when researching, preparing and writing a paper for presentation at the Taiwan conference early in 2000. ERIC initially had a ‘Clearinghouse on Adult, Career, and Vocational Education’. This was closed in December 2003 and material was incorporated into the main ERIC database. The databases were accessed in early 2005 for recently published material and to refine the search and the outcome of these searches is incorporated in the bibliography where relevant. Some material was accessed through interlibrary loans, while the remainder was accessed on line. Additional relevant literature was accessed through the papers and proceedings of the major conferences conducted in connection with international education and career education in Australia across a period of time.

The literature search confirmed the concentration of research in Australia that relates to international fee-paying students and English language acquisition and/or the economic significance of the industry. Much of the literature research is of a market intelligence nature, assessing market expansion potential. It appears that limited work has occurred on cohorts of students, or on examining their entry and exit points into the Australian education and training system and assessing their subsequent course completion rates.

3.3 PARTICIPATORY METHOD

3.3.1 PAPER PRESENTATIONS

The methodology of this study was planned and developed so as to engage in the use of a participatory method (Wadsworth, 1998). To this end, papers were written on this study, conferences were attended (both in Australia and overseas), other papers on the wider topics of international education and career education were written and presented and a chat newsgroup was used to report on progress and elicit feedback. Wadsworth (1998) would view this as a focus on a participatory process rather than engaging in action research.

In January 2000 a paper summarising the background literature and reading on this study was presented to the Taiwan conference (Calvert, 2000). The conference had as its theme 'Improving Classroom Research through International Cooperation'. Over 100 participants attended the conference and came from Australia, Brunei Darussalam, Canada, Hong Kong, Indonesia, Japan, New Zealand, Netherlands, Singapore, South Africa, Taiwan, and the USA. The writing of the paper and its presentation to an audience unknown in advance assisted with considering the cross-cultural issues that might arise in writing, implementing and evaluating a survey to the target population of international students. Some participants were from countries that were familiar with the notion of international fee-paying students (as they came from source or receiving countries) and others were not. In addition, attendance at the conference benefited me due to the discourse

that took place on a variety of research projects which posed a wide range of methodological issues. The audience was very surprised to learn of the large international student population in Australia.

In January 2003 there was a further opportunity to share information regarding the progress of this study with colleagues and peers at the Third Conference on Science, Mathematics and Technology Education in East London, South Africa and specifically the methodology being used. A paper focussing on the methodology being used was subsequently produced and refereed for the proceedings of the conference (Calvert, 2003). This paper and the feedback on the presentation assisted in finalising the planned sample size and mechanism for dissemination of the survey instrument.

Attendance and networking with other students and educational professionals in Taipei and East London in an international context was also useful, given that this study involved international students from a wide range of source countries. The East London Conference had as its theme 'Making Science, Mathematics and Technology Accessible to All' and had over 140 participants from Australia, Botswana, Canada, Hong Kong, Indonesia, Iran, Mauritius, Mozambique, Namibia, New Zealand, Nigeria, Singapore, Sweden, South Africa, Taiwan, The Netherlands, UK, and the USA. As a result of attending other paper presentations at the conference, the methodology and sampling of other research projects was assessed and used as a cross check of the methodology of this study. In addition an appreciation was gained of the teaching and learning of Science, Mathematics, and Technology in a Southern African context.

3.3.2 CONFERENCES

Other international, national and local conferences were attended (Appendix 3, Table 3.3) in order to further a dialogue around this study. The major conferences in Australia connected with international education are conducted by IDP, ISANA and NLC. The Australian Association of Careers Counsellors holds the conferences for career education. Two national conferences in 2002 relating to International

Education (IDP Hobart, October and ISANA Launceston, December) provided both the opportunity to approach institutions and the opportunity for networking with participants to discuss the progress of this study.

Another aspect of the participatory method was to engage in the doctoral seminar discussions of the Curtin Network in Tasmania. These discussions were significant in framing a candidacy proposal and in the consideration of a variety of methodological approaches to this study. The doctoral seminars provided an opportunity for an ongoing reflection of the progress of this study by the periodic reporting to others undertaking a similar journey.

3.3.3 ITEMS WRITTEN ON INTERNATIONAL EDUCATION

In the period 2000-2002, I wrote eight items for *Directions in Education*. Each item related to international education and summarised a number of news clippings on topical issues and they provided me with valuable background information.

2002

June

‘Australia’s Imagine in Asia’, *Directions in Education*, ACEA, Vol. 11:10

This item relates to the impact of asylum seekers trying to reach Australia and the adverse nature this might be creating in the Asian media.

‘Home and Away Blurring’, *Directions in Education*, ACEA, Vol. 11:11

This item explains recent developments of offshore education programs.

March

‘Bilateral Relations and International Education’, *Direction in Education*, ACEA, Vol. 11:4

This item expands the recent educational developments that have occurred between Australia and Indonesia.

2001

December

'Post- September 11', *Directions in Education*, ACEA, Vol. 10:22

This item reports on the possible impact of September 11, with regard to potential flows of international students.

October

'Student Visa Changes ', *Directions in Education*, ACEA, Vol. 10:16.

This item examines the likely impact of the changes of student visa subclasses introduced on July 1, 2001.

May

'The Competitive Edge', *Directions in Education*, ACEA, Vol. 10:7

This item discusses how institutions market for international students in the light of existing regulations.

March

'Quality and Customer Expectations' *Directions in Education*, ACEA, Vol. 10:3

This item discusses a number of newspaper items where it appears that universities have given international students preferential treatment

2000

November

'International Alliances and Code-Sharing', *Directions in Education*, ACEA, Vol. 9:16

This item discusses the diversification of the Australian international programs with the establishment of offshore campuses.

3.3.4 USING AVAILABLE NETWORKS

ISANA provides the opportunity for items and messages to be posted on an electronic mailing list called ISANAnet, at listproc@info.curtin.edu.au. This service is hosted by a server at Curtin University of Technology. In effect this can be used as a newsgroup forum allowing two-way or multiple comment by subscribers on an item or issue of professional interest. An item about the study was sent out to ISANA members on October 15, 2004. This item also included electronic links to previous papers (Calvert 2000, 2003). There were limited responses.

Towards the end of this study (January-February 2005) there was a phase of gathering, cross-checking and updating information from a number of people and organisations (for example the British Council for recent U.K. international student statistics). In most cases these exchanges broaden into a wider discussion of this study.

3.4 SUPPORT OF OTHER BODIES

The National Liaison Committee for International Students in Australia is the peak body representing international fee-paying students. Support was sought for this study from the National Convenor and contact was made in May 2001 with the National Co-coordinator Khee Kwong Tan. An outline of this study was given to the National Co-ordinator and this was followed with a formal request, by letter to the incoming National Convenor, Adrian Wong on September 8, 2002. The letter contained a specific request that the information sheet distributed with the questionnaire would contain the statement that this research study “has the support of the NLC”. Permission was granted on October 24, 2002 and the information sheet (Appendix 1) accompanying the questionnaire contained a statement to this effect.

Involving the relevant NLC state branches (ACT, Victoria and WA) to assist with publicity of this project was intended to raise awareness about this study, specifically about the questionnaire sent to the students at the selected institutions. Such an awareness-raising program was anticipated

to improve the response rate of the questionnaires. The Tasmanian NLC branch was already aware of this study from presentations given at State conferences in 2000, 2001 and again in 2004. Issues arose with the use of state/territory branches because of the need to focus attention at specific institutional levels. Some institutions are composed of multi-campus, such as Monash University; however the questionnaires were only being distributed on one of its campuses (Clayton). The NLC Victorian branch responded but appeared to only have limited means of contacting the target questionnaire sample for Monash. Support was also received from other branches but similar problems to those at Monash were encountered.

The International Student Advisers' Network of Australia (ISANA) is the principal body for individuals working with international students in Australia and New Zealand.

ISANA members work in a broad range of roles, providing services to international students, either directly through education provider institutions,(on and off shore), or via ancillary service providers such as accommodation, health and welfare services, government and corporate agencies in Australia and New Zealand ISANA: International Education Association, 2002, p.4.

The current ISANA Annual Report (ISANA: International Education Association, 2004, p. 20) lists 117 occupations carried out by the 2004 membership. The Tasmanian ISANA branch was approached for support and the survey instrument benefited from the considerable feedback gained from ISANA Tasmania members who were international advisors at institutions from all the relevant levels of education and training.

3.5 PROFESSIONAL BODIES

A number of national professional bodies relevant to the career outcome of studying in the fields of Science and Engineering were identified in 2002 (Appendix 5) and eight professional bodies were identified on the basis of membership size (Table 3.5-1). One body, the Association of Professional Engineers, Scientists and Managers was subsequently

identified as an industrial society. Contact was then established with the remaining seven professional bodies to obtain their feedback on the survey instrument and gain advice with respect to institutions that could be approached to disseminate the questionnaire.

Table 3.5-1 Career Professional Bodies

Association	Members*	National Base
Association of Professional Engineers, Scientists & Managers	25,000	Melbourne
Institute of Engineers	67,000	Canberra
Australian Computer Society	16,000	Sydney
The Australian Mathematical Society	1,000	Brisbane
Australian Institute of Biology	600	Brisbane
Australian Institute of Physics	2,500	Melbourne
Australian Society For Microbiology	3,200	Melbourne
The Royal Australian Chemical Institute	9,500	Melbourne

* Membership approximate

Source: (Wexham, 2002)

Others bodies with substantial memberships exist but reflect the specialised areas of Engineering, these are: the Institute of Materials Engineering Australasia (1,400 members), the Institute of Chemical Engineers in Australia (3,100 members), the Institute of Industrial Engineers (695 members) and the Institute of Electrical and Electronics Engineers (4,500 members). Because of the highly specialised nature of each body they were not approached to assist in this study.

A similar letter was sent to the seven national bodies approached, identifying the method and potential outcome of this study.

... [This study seeks] both the support of your Institute and input into the finalisation of the attached survey instrument,

and advice on which institutions to approach to conduct this survey.

[It is] anticipated that the survey will be given to international fee-paying students across all sectors (high school to postgraduate level). Approximately 10 institutions were to be approached and asked to participate in this research.

A response was received from all seven bodies, although the nature and level of the response varied considerably. Support was received from the Australian Computer Society and the Australian Institute of Biology with the Australian Computer Society providing data of the number of international fee-paying students who had sought a skill assessment for obtaining permanent residence to Australia by institution of course completion. Part of this data is reproduced in Appendix 9 Table 9.2. The Australian Institute of Biology considered a draft of the questionnaire and made a number of constructive comments however some professional bodies such as The Australian Society for Microbiology were unable to assist because of a limitation of resources. The Australian Institute of Physics made suggestions with regard to obtaining ethics clearance for the questionnaire while the Royal Australian Chemical Institute had difficulty in responding because the appropriate office bearers were overseas and unavailable. Phone and email contact was established with the Institute of Engineers, Australia and the Australian Mathematics Society, each of which made comments about the nature of the approach to prospective institutions that might participate in this study.

Overall, the contact with the professional bodies did not generate the level of support anticipated. It appeared that this study seemed to be viewed as 'just another study', and there seemed to be little interest in international fee-paying students and the size of their enrolment as part of the total student enrolment. Some of the professional bodies operated without a permanent secretariat and therefore their ability to respond to all the requests made of them was limited.

3.6 POPULATION DATA

Statistical data for Australia is derived from Australian Education International (2001), IDP Education Australia (2004), The Good University Guide (Ashenden & Milligan, 2001), the Australia Vice Chancellors' Committee (2003) and the Australian Computer Society (Burrell, 2002). Total international fee-paying student population data was taken from AEI while the population sizes for Engineering, Computer Science, Science and Mathematics by institutions were taken from The Good University Guide (Ashenden & Milligan, 2001).

Census data for institutions is usually expressed in terms of effective full time equivalent enrolments rather than head counts. In Australian tertiary institutions data is recorded in terms of Effective Full Time Student Units (EFTSU) (see Appendix 8). Given that international fee-paying students are required to be full time as part of their student visa conditions, variations of data would usually only occur due to a student's course overload. International comparison of data is not as clear and the definition of population figures may be open to considerable interpretation. Statistical data for Australia's principal competitors is from the British Council for the UK (British Council, 2005), the Open Doors publication for the USA (Institute of International Education, 2004) and from Education at a Glance (OECD, 2004b).

At the time of my preparing plans for the development and dissemination of the survey instrument it was the AEI 2000-2001 data (Australian Education International, 2001b) that was of particular significance in determining population and sample sizes.

Table 3.6-1 Overseas Fee-Paying Students - Australia 1998-2000

Sector	Total 1998	% 1998	Subject	Total 1998	% Sector Enrolments
Higher Education	73,383	49.9	Engineering	6,459	8.8
			Science	9,591	13.1
VET	37,328	25.4	Engineering	891	2.4
			Science	2,883	7.7
School	13,878	9.4			
ELICOS	22,541	15.3			
Total	147,130			19,824	13

Sector	Total 2000	% 2000	Subject	Total 2000	% Sector Enrolments
Higher Education	116,496	57.2	Engineering	8,313	7.0
			Science	16,123	14.0
VET	39,178	16.3	Engineering	701	2.0
			Science	6,583	17.0
School	13,829	7.0			
ELICOS	18,774	19.5			
Total	188,277			31,720	17

Source: (Australian Education International, 2001b)

From Table 3.6-1 it can be seen that over the period 1998-2000 the total international fee-paying enrolment increased by 22 percent. There was a substantial increase in the numbers of students in the Higher Education sector while, in percentage terms the ELICOS sector increased. The 1998 figures are influenced by the effects of the Asian Economic Crisis of 1997. There was a 30:70 differential for the undergraduate compared to postgraduate population. Between 1998 and 2000 there was a consistent definition of the Science field of study. This has changed more recently to now include the enrolment subgroups (in order of significance) Computer Science, Life Science, Science, Physical Science and Mathematics. The pattern of enrolment in Engineering and Science changed, with Science in the VET sector becoming more important. Further information about these changes is outlined in Appendix 8.

The examination of the population data of international fee-paying students, particularly the data relating to those students who studied courses in the Science and/or Engineering fields was significant in determining which institutions might be approached to participate in the study. The data was also relevant in determining sample sizes.

3.7 ETHICS COMMITTEE CLEARANCE

Clearance was sought from the Curtin University of Technology Human Research Ethics Committee for the dissemination of the questionnaire. There was a subsequent renewal of this application that also covered the request to interview a sample group of students. Additional clearances had to be obtained from the South Australian Department of Education, Training and Employment (this related to the four schools that participated in the study) and from the University of Tasmania.

The Curtin Application was made in 2003 and was based upon a request to circulate a Survey instrument which was to be circulated in hard copy form. A number of institutions were approached to participate and asked to identify participants in the target group and the institutions were then supplied with quantities of the survey form. Actual numbers varied with education sector however the total population to be surveyed was 1035.

As the target group was international students (students from a number of ethnic groups were to be surveyed), cultural sensitivity was to be preserved. The survey was coded to reflect institutions and the data from assigned a code to reflect individuals. No individuals were to be identified in the collation of data and it was aggregated to preserve the identity and privacy of individuals. It was possible for individuals to identify themselves to the researcher, but this was only to facilitate a potential interview or further discussion later in this study. Responses were de-identified to the extent that only the supervisor or the writer was able to identify individuals.

As the processing of questionnaires had not been completed an additional application to the Curtin University of Technology Ethics Committee

was made in 2004 to renew the previous application. This also covered the interviewing of a subgroup of those students who had previously completed questionnaires. The intended purpose of the interviews was to clarify responses from the completed surveys, to explore responses and issues in more detail, and to explore any associations identified from the statistical analysis of the surveys. It was anticipated that 15 interviews would be undertaken: in reality, 22 were conducted.

Respondents were selected for an interview based on their willingness to do so after completing a section of the questionnaire. At that stage it was planned for the interviewing to be carried out in June – July 2004 however it was actually completed in September – October 2004. Contact with respondents was made by letter or email, outlining the purpose of the interview and seeking their consent to participate. A mutually agreeable time for the interview was established. It was intended that the interviews would be recorded and then a transcript of the record of the meeting was sent to the interviewee for validation. In making the application it was anticipated that about six to eight questions would be put to the interviewees mainly to explore study progress and its relationship with career intention. Ethics Committee approval HR 155/2003 was extended until October 8, 2005.

An application was made to the Department of Education and Children Services in South Australia on April 11, 2003 seeking specific ethics clearance because the students to be surveyed were potentially minors (aged less than 18 years). Thus a Parent Consent form was designed and was circulated. As part of the application a research undertaking was provided and an agreement was made to obtain consent forms from a carer and /or guardian. Approval was gained on May 29, 2003 (File DECS 0683/03.d).

The University of Tasmania also required an additional clearance. This was given on October 10, 2003. All other institutions were faxed or emailed a copy of the Curtin clearance and this was accepted.

3.8 SURVEY INSTRUMENT DEVELOPMENT

The development of the questionnaire and its final format was based around a number of other surveys disseminated over the period 1999-2001. The most relevant ones were:

- 'AEI Survey of International Students - Finishing a Course of Study in Australia' (December, 1999).

This was a survey on client satisfaction. It had 43 items, used a 5-point response scale and a 'tick a box' approach.

- 'Cascade –Sea' (August, 2000)

This was an evaluation of an educational software package on CD Rom. It required the installation of software. There were six items requiring written comments.

- 'Competencies in Managing Multicultural Workers' (October, 2000)

This was a survey for a PhD student's data collection. It was sent to the membership of a defined organisation. It used a reply paid envelope, and it had a cover letter with supporting endorsement from President of ISANA, an information sheet, 57 items and a 7-point scale.

- 'Higher Education Student Survey' (May, 2002)

This was data collection for a university assignment. It had a 7-point scale and 18 items. Using a 'tick-a-box' approach it was emailed to potential participants.

- 'Survey of Tasmanian Year 10 Students' (October, 2002)

This was a state-wide survey of students in Mathematics classes in Grade 10. It had a 5-point scale, 40 items, a circle option approach and five sections. It was administered in class under supervision. A cover letter to the school and to the teacher was provided, as well as an information sheet to each participant.

➤ 'Librarianship and Doctoral Supervision' (2002)

This was a survey for a PhD student's data collection. It included a consent form for interview. Interviews were conducted by phone. A record of the interview was sent to recipients to validate information.

➤ 'Survey on the Need for Statistical Support for Higher Degree by Research Students' (undated)

This was a survey from the Office of Research and Development of Curtin University of Technology higher degree students. It was on one page, with 10 items, and it required a 'tick-a-box' response.

The receipt of a number of these questionnaires also allowed for a consideration of possible sampling methodologies that could be applied to this study. In the case of the AEI survey, the administration and collection of the questionnaires and the subsequent data was discussed in some detail with the originators of the survey. The factors to be taken into account in the design of the survey instrument were: responses were voluntary; the dissemination of the questionnaire would be reliant on staff at the institutions and therefore not under the direct control of the researcher; there was the need to ask for a considerable amount of information without the questionnaire appearing too long, which adversely affected the return rate of completed questionnaires. Along with this, the respondents' first language was not English.

The recipients of the survey instrument were to be asked their previous, current and potential courses and possible career path. As a consequence, the questionnaire (Appendix 1) was divided into six sections: Background, Educational Background, Current Educational Studies, Future Educational Studies, Career, and Contact Details (the latter were optional). A 'tick- a -box' respondent approach was adopted for two reasons: it was quicker and easier to administer and language difficulties were possible. There were 39 items, although most respondents had to

complete only 30. Most questions used a 5-point scale (excellent, good, satisfactory, needs improving and unsatisfactory).

Section A 'Background' was drawn up to contain demographic information about the respondents: gender (question 1); age (question 2); nationality (question 3); and the location where studies are being undertaken (question 4); sector of current study (question 5); and levels of English (question 6). Whilst English requirements exist for undergraduate and VET sectors because one of the sectors is ELICOS, the questionnaire was designed to accommodate some students with a fairly basic understanding of English.

In the development of the questionnaire the student visa subclass 560 was replaced by new visa subclasses (570 ELICOS, 571 Schools, 572 VET, 573 Tertiary-undergraduate, and 574 Tertiary-postgraduate), which came into effect on July 1, 2001. It was decided to adopt these, as they reflected each of the main sectors of education and training and they were incorporated into question 5. A note relating back to the old visa subclass had to be retained because some students in the third or fourth year of, their Engineering course, for example, might still have had this type of visa.

The focus of Section B was on 'Educational Background': that is, information on education prior to the current course. The questions in this section related to the students' previous course (academic level); whether the course had been completed in Australia, or offshore as part of a twinning program; whether it involved Science and/or Engineering; whether it was full time or part time study; and whether the mode of study was by distance education or on campus. One question required some form of self-assessment about the achievement reached in the course. There was also a question concerning the transition process from offshore to onshore study, asking for a response about the greatest concern when making the change and how the students subsequently found course work in Australia.

Section C related to 'Current Educational Studies' and covered questions 15 to 29. The questions concerned the current course level, when the current course commenced, and the intended qualification at the conclusion of the course. Question 18 checked that the recipient was undertaking a course in Science and/or Engineering. Other questions covered credit-transfer and whether the student participated in an introductory academic course, such as a study skills or orientation course prior to their current studies. There were questions measuring satisfaction with the current course by asking the respondent to rate: the quality of teaching, their satisfaction with the current institution, the most important aspect of the current course, and their anticipated course completion achievement standard. Additional questions asked the respondents if they knew whether their course was recognised by a professional body or society in their home country and how they found out about the recognition of the current course. Some questions required information about extra curricula activities in relation to participation in the current course of study.

Section D focussed on 'Future Educational Studies'. This section related to the respondents' possible future plans, whether they would remain in Australia for study, and which possible additional qualifications beyond the Australian qualifications they might aim for in the future. Section E focussed on career intention, including the source of previous career advice or preparation for embarking on the course of study in Australia, and what their intended career might be. Question 36 asked for a rating on how well the current course prepared the respondent for their intended career. Questions also related to the provision of career advice in the current institution where they were studying. Question 39 allowed for an overall comment on the respondents' experience in the Australian education and training system. In Section F, 'Contact Details', respondents were able to volunteer for a further discussion on their views of Australian education and training.

Most questions presented the common answers as options. In some cases where the range of responses may have been broad, an additional line

was included for a short written response from the respondents. More lines were included in Section D for 'Future Educational Studies' and in Section E 'Career' where it was difficult to incorporate all the possible responses.

Whilst it was intended to use a 5-point scale (excellent, good, satisfactory, needs improving and unsatisfactory) for question responses, there were variations on this. Questions 10, 14, 22, 23, 24, 26 and 38 used a 5-point scale. The wording was changed in other questions. In question 6, for example, the 5-point scale was changed to advanced, good, intermediate, needs improving and beginner, to better reflect the content of the question and a 4-point scale was used on question 11b (very difficult, difficult, about the same, very easy) and question 36 (very well, fairly well, reasonably well, not at all). The changes aimed to improve the clarity of the question.

A yes/no response was required on questions 9a, 12, 18, 19, 21, 27, 30, 33, 34, 37 and for Section F. Choice options were given for questions 1, 2, 3, 4, 5, 6, 7, 8, 9b, 9c, 9d, 9e, 11a, 13a, 13c, 15, 16, 20, 25, 28, 29, 31 and 32. Written responses were kept to the minimum to avoid language interpretation issues and were only required for questions 9c, 13b, 17, 35 and 39. Multiple responses were possible for two questions (question 25 and 29). For question 25, questionnaire respondents were required to rank in order of importance the given variables from one to five (1 being the most important and 5, the least important). There were subsequent difficulties with this question, and these are discussed in Chapter 4. Responses required for 7, 8, 9a, 10 and 11a depended on the answer to the stem question. Supplementary questions also occurred in relation to questions 30 where a 'No' response required question 31 to be answered and a 'Yes' response led to question 32. Question 33 included an internal yes/no question.

Under each section heading (A, B, C, D and E) there was a statement in the first person giving respondents direction about what was required in that particular section of the questionnaire. This was included on the

advice of ESL teachers to improve the clarity of the questionnaire. The information accompanying the questionnaire included a statement relating to the intended respondents, as well as the purpose of the study. Statements about confidentiality, project source and organisation were included. Respondents were given the contact details of the Curtin University Human Research Ethics Committee and Dr Bevis Yaxley (project supervisor) if they had any issues they wished to raise or discuss. A support statement from the NLC was also incorporated.

3.9 TRIALLING AND EVALUATION

As the questionnaire was designed to be completed by students across all levels of education and training from secondary school to postgraduate, it had to be fairly robust and it had to appear relevant to all respondents' experiences. As a consequence, considerable piloting of the questionnaire occurred. The development of a survey instrument over a period of nearly two year, from 2000-2002, allowed time for considerable reflection and refinement of the items. The period April 2002 - July 2002 was a time when considerable trialling and evaluation took place. Drafts of the questionnaires were shared and discussed with international student advisers and teachers (Table 3.9-1). Drafts were also trialled with small focus groups of students reflecting each of the sectors (Schools, VET and Higher Education). Refinements to items were made at various stages. Changes were made to identify more characteristics of pathway activities, as well as identifying more indicators for measuring success.

The questionnaires were distributed to three small focus groups (2-3 members) with students from the secondary, VET and higher education sectors. The feedback from international student advisers (members of ISANA Tasmania), teachers and students involved potential changes to the language of the questionnaire to improve its clarity (such as including the use of the International English Language Testing System scales),

Table 3.9-1 Trialling of Survey Instrument

Sector	Who	Focus
Secondary	<ul style="list-style-type: none"> • Two international student advisors from different institutions • Secondary careers practitioner 	<ul style="list-style-type: none"> • Language • Cross-cultural responses • Educational concepts • Careers
VET	<ul style="list-style-type: none"> • Five international student advisors from different institutions 	<ul style="list-style-type: none"> • Language • Cross-cultural responses • Educational concepts
Higher Education	<ul style="list-style-type: none"> • Two international student advisors from different institutions • Tertiary careers practitioner 	<ul style="list-style-type: none"> • Language • Cross-cultural responses • Educational concepts • Careers
General	<ul style="list-style-type: none"> • Teacher with English as a second language teaching background 	<ul style="list-style-type: none"> • Language
Professional Bodies	<ul style="list-style-type: none"> • Outlined above in Section 3.5 	<ul style="list-style-type: none"> • Subject content

and to develop a consistency of style and language. Broader conversations occurred with advisors and teachers especially in relation to what students from various cultural backgrounds might make of terms such as ‘career paths’, ‘entry points’ and ‘exit points’. These conversations raised issues associated with what Lent & Worthington (2000) describe as “cultural validity” (p.382) and Leong (2002) refers to as “universalist”, “assimilation” and “cultural accommodation approaches” (p. 282). These will be discussed later in Chapter 5.

One major aspect of the development of the questionnaire was how to elicit information through the options offered in each question without directing the nature of the response. The development of notions of pathways given the cross-cultural context, and an appropriate range of indicators of success, were also other significant issues that needed to be addressed. It was not practicable to consider ‘back-translation’ where the

English questionnaire might be translated into some key languages to improve the clarity of the survey instrument. The final sample had responses from students of 23 nationalities. Consideration was given to 'code switching', the switching between English and first language and cognitive language proficiency. This was one aspect of the dialogue with the ESL teacher and the final questionnaire reflected the outcome of this discussion.

3.10 SAMPLE SIZE FOR THE QUESTIONNAIRE

Initially it was intended to distribute approximately 1,000 questionnaires, cover letters and reply paid envelopes statistically based on the total populations of Science and Engineering international fee-paying students at the time. Approximately 400 completed surveys were targeted, this figure related to the sample size of populations given by Krejcie & Morgan (1970). The sample methodology and size of previous studies by the Australian International Education Foundation (1998), and Athanasou (2002) were also considered. The finalised sample size and methodology were determined as a consequence of feedback at the conference in East London and the related paper presented.

3.11 APPROACHES TO INSTITUTIONS

It was originally intended to approach nine institutions (Table 3.11-1). The institutions to be approached ranged across education and training sectors mirroring the distribution of international students across each sector. The sector population figures were based on the international student population data for the year 2000. For the Higher Education sector the sample would be split 70:30, representing the ratio of undergraduate to postgraduate international fee-paying students.

In determining the survey sample each institution was asked to identify a contact officer. Discussions occurred with the relevant contact officer about the purpose of the research project and to determine the target survey sample. It was left to the contact officer to identify the target

Table 3.11-1 Proposed Samples for the Distribution of the Questionnaire

Sector	Visa Subclass	Institution	Survey Sample	Total Population %
ELICOS	570	1	100	20
		2	100	
Schools	571	3	35	7
		4	35	
VET	572	2	80	16
		5	80	
Tertiary-Undergraduate	573	6	115	57
		2	115	
		7	115	
		8	115	
		9	115	
Tertiary-Postgraduate	574			
Total			1,005	100

sample within the framework identified in Table 3.11-1. It was intended that the relevant NLC Branch at the institution would assist with the dissemination of information about the project. It was hoped through this public relations mechanism, that an appropriate response rate would be achieved.

In all, 14 education and training institutions registered on CRICOS were approached to participate in the study (Table 3.11-2). Of these seven agreed to participate. From one of these (Box Hill TAFE), no completed questionnaires were received. Another provider was the Department of Education and Children Services – South Australia, which encompassed the five schools that participated in the study (Adelaide High School, Banksia Park High School, Charles Campbell State School, Glenunga International High School and Norwood-Morialta High School).

One aspect of the approach to each institution was the determination of an appropriate first contact person. On some occasions, the contact person was from the international office, and for other institutions it was a member of the academic faculty (maybe a dean in the Department or

Table 3.11-2 Institutions Approached 2003

State/Territory	Sector	Institution Type	Institution
ACT	Higher Education	University	University of Canberra
	Schools	Department of Education*	
QLD	Higher Education	University	Queensland University of Technology*
SA	Higher Education	University	Adelaide University*
	Schools	Department of Education	Adelaide High Banksia Park High Charles Campbell Glenunga International High Norwood-Morialta High
Tasmania	Higher Education	University	University of Tasmania
	VET		TAFE Tasmania
Victoria	Higher Education	University	Melbourne University*
	Higher Education	University	Monash University
	Higher Education	University	RMIT University*
	Higher Education	University	Victorian University of Technology*
	VET		Box Hill TAFE
WA	Higher Education	University	Curtin University of Technology
	VET		Western Australian TAFE*

* Approval not received

School of Science and/or Engineering), on other occasions, it was someone in an administrative position (such as the Academic Registrar). For some institutions it required a chain of people. In the case of one tertiary institution, five people were involved and still the request was rejected. No pattern was discernible in the manner of approach. A

mapping of who was contacted first in each institution showed that the same number of people (four each) approved and did not approve the dissemination of the questionnaire from the international section of the organisation. The same number (three each) approved and did not approve the dissemination of the questionnaire from the administrative areas of institutions.

For some institutions there was confusion about whether a new ethic committee clearance was needed from the institution itself. Although it was never explicitly stated, on occasions the approach to the institution about international students raised the question of whether or not this was an issue involving 'commercial in confidence'. In some cases the request required several months of discussion. Unfortunately in one case where an institution agreed, participation was affected because one staff member went on maternity leave, with the replacement staff member deciding not to accede to the request. A letter of support for the project from Dr Yaxley, dated December 12, 2002, was sent to each institution seeking their participation.

Adelaide University declined because it was felt that too many surveys had already been given to the target cohort of students. For RMIT University and WA TAFE there were resource issues about who would support the distribution of the questionnaires within the institution. In a number of cases it was resolved to commence the distribution of the questionnaire before final approvals were given. To leave dissemination any later in the academic year might have prejudiced the response rate.

3.12 IMPLEMENTATION

The questionnaire was designed as an A4 booklet made up of two A3 sheets of paper (Appendix 1). Groups of questionnaires had a batch number printed on them, and as the questionnaire was to be returned from individuals, the batch number would assist in determining from which institution the questionnaire had originated. The questionnaires carried a deadline date and were printed at Curtin University of

Technology and then distributed to the relevant contact person at each institution in bulk, together with the appropriate quantities of the Information Sheet and postage reply paid envelopes for return of the questionnaires to the Science and Mathematics Education Centre at Curtin University of Technology. The participating South Australian schools were sent the questionnaire electronically, in some cases to be photocopied, so that a hard copy could be completed by the respondent. The schools were also sent the appropriate number of Consent Forms for parents or carers to sign. The exception to this was the distribution to students at Monash University, who were sent the Information Sheet and the questionnaire electronically to be completed electronically. Slight amendments were made to the questionnaire to allow students to enter crosses for their answers where appropriate. Unfortunately it later became apparent that rankings of one to five could not be entered by students for question 25. This issue is discussed in detail on page 126.

It was intended that the batches of questionnaires to the institutions would allow for the attachment of mailing labels or be distributed through lectures and tutorial groups. It was left to the different institutions to determine the actual mechanism. In the case of Curtin and Tasmanian Universities, the institution's contact person selected the students and the questionnaire was mailed to them. There was an ongoing concern about the response rate of the questionnaires. If the response rate appeared too low other institutions would be approached to circulate the questionnaire to their students in summer school programs. Fortunately this did not occur.

One aspect of the dissemination of the questionnaire was that institutions and international fee-paying students were being approached to participate in other questionnaires at approximately the same time. In the period from October to November 2003 (part of the period that the questionnaire for this study was being completed) the following questionnaires were also being circulated:

- AEI Australian University Students and Overseas Study Project – October.
This questionnaire asked respondents about the benefits and imitations of participating in overseas study opportunities. It was open to those who have and have not studied overseas. Completing the questionnaire entered the respondent into a competition to win a \$500 voucher.
- Monash University International Satisfaction Survey - October
Interestingly this questionnaire, even with the possibility of winning a DVD player on completion, only had a response rate of 12 percent.
- University of Tasmania Research Higher Degree Annual Review Survey
These students were not included in the University of Tasmania sample for this research project because they were being surveyed by the Research Office for their annual review.

For the Curtin, Monash (Clayton campus) and Tasmania Universities the total populations were 745, 1709 and 382 for international fee-paying students in the Science and Engineering fields (Table 3.12-1).

Table 3.12-1 Profile of Population

	Curtin	Monash-Clayton	Utas
All Fields	745	1709	382
By degree level			
Undergraduates	589	1110 *	285
Post Graduates	156	599 *	97

* (Png, 2005)

The profile of the questionnaire sample by course and level of study is given in Table 3.12-2. The split of 70:30 undergraduate/postgraduate was maintained. In the case of Monash, the questionnaire was emailed from the Monash international office to all 1,709 students.

Reminders were sent to students through the relevant institution contact person in late November and December 2003 to return the questionnaires. Where there was a random sample chosen there were difficulties in identifying individuals to send them a reminder.

Table 3.12-2 Profile and Response Rate from Curtin, Monash – Clayton and Utas

Populations	Curtin	Monash-Clayton	Utas
Science & Engineering	745	1709	382
Sample - questionnaire	29	22	31
Response %	4	< 1	8

The profile of the questionnaire sample by course and level of study is given in Table 3.12-3.

Table 3.12-3 Profile of the Sample at Curtin, Monash and Tasmania Universities

Field	Curtin	%	Monash - Clayton	%	Utas	%
Biotechnology					5	
Computing	37		812	26.21	25	
Engineering	32		697	9.65	50	
Science	11		200	2.75	10	
Subtotal-Science & Engineering		20		39		20
Subtotal -Undergraduates	80	79		65	90	75
Masters Applied Science					7	
Masters Computing					12	
Masters IT					6	
Subtotal - Postgraduates	35	21		35	25	25
Total	115		1709		115	
Foundation Studies					6	

% = Total international fee paying student enrolment by Field of Study

3.13 QUESTIONNAIRE RESPONSES

The total number of questionnaire responses was 110. The respondents came from 23 countries studying at nine institutions (Table 3.13-1). Table 3.13-1 shows the numbers of questionnaires dispatched to each of the institutions. Respondents (in order of significance) mainly came from the PRC, Malaysia, Indonesia, Singapore, Hong Kong, Thailand and India (Table 3.13-2). In all, the questionnaire sample included students of 22 nationalities. Of this sample 63 were male and 47 female.

Table 3.13-1 Questionnaire Responses by Institutions

Sector	Institutions	Batch	Numbers (Sample)	Response	Sector Response
SCHOOL					24
	SA Education Department Adelaide High	1	70	3	
	Banksia Park International High School			6	
	Charles Campbell High			1	
	Glenunga International High			14	
	Norwood- Morialta High School			0	
VET					2
	Box Hill TAFE	6		0	
	Tasmania TAFE	7	30+20	2	
Higher Education					84
	Canberra	4	115	2	
	Curtin	5	115	29	
	Monash	3	1,709	18+4=22	
	Tasmania	2	115+80+5= 200	31	
Total			2,259		110

Table 3.13-2 Questionnaire Responses - Country of Origin by Institution

Nationality	ADE HIGH	BP HIGH	CC HIGH	GLEN HIGH	TAS TAFE	CBE UNI	CUR UNI	M UNI	UNI TAS	TOTAL
Argentina								1		1
Brunei							1			1
Czech Rep									1	1
China-PRC	3	6	1	11			1	1	2	25
Chile									2	2
United Arab Emirates							1			1
Hong Kong				2				5	1	8
India							1	4		5
Indonesia							10	1		11
Japan				1	1					2
Kenya							1			1
Malaysia						1	4	4	13	22
Myanmar							1			1
Mauritius								1		1
Russia								1		1
Singapore						1	4	2	3	10
Sri Lanka									1	1

Taiwan					1		1			2
Thailand							3	1	4	8
UK								1	1	2
USA									1	1
Vietnam							1		2	3
Total	3	6	1	14	2	2	29	22	31	110

- ADE Adelaide High School
- BP Banksia Park International High School
- CC Charles Campbell High School
- GLEN Glenunga International High School
- TAS University of Tasmania
- CBE University of Canberra
- CUR Curtin University of Technology
- M Monash University

3.14 PROCESSING OF QUESTIONNAIRE

The results of questionnaires were tabulated into a 30 page Excel document of tables. Some initial trends were evident from this collation of raw data. The raw data was subsequently entered into an Excel spreadsheet (Appendix 2). This entry occurred directly from the questionnaire. There was a cross-check of accuracy of input by comparing the results with the raw data tabulated results. The coding used was in the form of abbreviations.

The Excel spreadsheet of data was used as the base data for entering into the SPSS statistical package. The Excel spreadsheet was sent to the Learning Support Network Centre at Curtin University of Technology for entering into SPSS. Initially version 11.5 was used but the final product was generated by version 12. The data entry was checked and corrected. There was the need to ensure consistency of variables on the excel spreadsheet as it was inputted into SPSS (for example, that a capital M was used for male rather than a lower case m). Frequency tables were generated. A number of cross-tabulations were conducted. Tables of statistical significance were identified and some initial analysis and interpretation was conducted using Chi-squared tests to identify statistically significant associations.

Because of the sample size and the necessity of maintaining appropriate cell values in using Pearson's Chi test it was important to aggregate some data responses. This aggregation ensured that the minimum cell values would be greater than five in order to ascertain the 'best fit' or significance of data (Pallant, 2005).

3.15 INTERVIEWS

Students were asked at the end of the questionnaire if they were willing to be interviewed at a later date, either on a one-to-one basis or in a focus group. Their participation was to be voluntary. It was intended that the questions would relate to the project objectives and especially "...factors

impacting on the successful completion of a course for international fee-paying students in Science and/or Engineering” and explore “career pathways” in this field of study. It was anticipated that the questions would be asked of different populations (students from different sectors) and would be used to validate analysis and test assumptions from the collated survey data.

The interviews were also planned to clarify responses from the completed survey and to explore responses and issues in more detail. The interviews were also an opportunity to explore any associations identified from the statistical analysis of the surveys. It was also intended that the responses at interview might elaborate on the ‘why’ of student decisions to add to the ‘how’ identified in the questionnaire responses.

In planning to interview students, the grounded theory method (Morse, 1998) was considered. Interviews were conducted either in person or by telephone and of the interview sample, 11 were interviewed in person and nine by telephone, and two by written submission. The one-to-one interviews occurred as a result of an initial approach by a phone call with a confirmation by email. The focus questions were emailed in advance of the interview. Most of the interviews were conducted in a seminar room in a library. The approach for an interview by telephone was conducted in a similar way. The interviews were taped on a speaker phone after obtaining the consent of the interviewee.

Originally 15 interviews were planned. The number of interviews conducted was revised upwards to 22, or 20 percent of the questionnaire sample respondents. This occurred as a consequence of the number of completed questionnaires received being less than originally anticipated. As a result, the interviews became a more essential aspect of the methodology of the study. The interviews were conducted as a series of one-on-one interviews with students and not part of a focus group as originally intended.

Focus questions (Appendix 4) were developed for the interviews. The main intention in the interview was to explore study progress and the relationship between a student's course and their career intention. In all, ten questions were posed. The questions related to whether the interviewee had received career advice at high school, explored what factors lead to their decision to undertake the current course of study, examined the relationship between the current course of study and the interviewee's intended career, asked whether the current course was recognised in the interviewee's home country, and if the interviewee had availed themselves of career advice in their current institution. Questions also explored whether the term *credit-transfer* was understood and how the interviewee had found out about the term. The final question asked the interviewees whether they wanted to make any comment about their experiences in the Australian education and training system.

The interviews were taped onto a micro cassette recorder either at the interview in person or by phone (personal interviews 11, phone 9, and written submissions 2) and then transcribed. The transcribed interview notes were checked and then emailed to the interviewee for verification (Appendix 12). As a consequence the quality control approach described by Guba & Lincoln (1989, p. 238) as "member checks" was used. Some of the interview notes were then amended to reflect any concerns or errors identified by the interviewee.

The interview technique employed used focus questions to provide the structure for the interview. The questions were intended to be used as a basis of the interviewee to 'tell their story' but with a purpose underlying the interview to aid subsequent interpretation and analysis. In part this drew on oral history techniques. The questions proved to be the basis of a potential ongoing dialogue that then led to more questions being posed. Freebody (2003) discusses the use of such follow-up interviews and qualitative thematic analysis.

Table 3.15-1 reflects the distribution of interviewees by institution and gender. The main mechanism for initial contact with students was by

email. It was found that, in the ten months between completing the questionnaire and contact being made by email, a number of students were no longer using their institution email account or had changed their Internet Service Provider (ISP) and emails bounced back unanswered. This made contacting some questionnaire respondents difficult as their contact details were no longer valid. Some students had completed their studies and returned home. Of the interview sample two students had completed their studies completely and one of these had returned home to Malaysia.

Table 3.15-1 Interviews by Institutions

Institutions	M	F	Total
Curtin University	2	-	2
Glenunga High	-	1	1
Monash University	3	3	6
TAFE Tasmania	1	-	1
University of Tasmania	8	4	12
	14	8	22

The interview sample characteristics are summarised in Table 3.16-1 and recorded in Appendix 7. The transcripts are included in Appendix 10. The sample came from (in order of significance) Malaysia (10), Hong Kong (3), and one each from Argentina, Czech Republic, Mauritius, PRC, Sri Lanka, Taiwan, Vietnam, UK and the USA. The interviewees came from the School sector (1), VET (1), undergraduate (14) and postgraduate (6). Three of the interviewees were in programs that were part of a twinning program offshore. The sample also represented five institutions, four sectors and a variety of intended career outcomes.

3.16 SHARING OF RESULTS

The results from the questionnaires and interviews were shared with the institutions who participated in the study. This was done in part to put the results in context and to gain any relevant background views or observations on them. Some of these views have been discussed in Chapter 5.

Table 3.16-1 Interview Sample Characteristics

Case No.	Gender	Nationality	High School	Sector	Program Type	Degree	Intended Career
1	M	Malaysia	P	UG		B Sc	Chemist or physicist
2	M	Malaysia	P	UG		B Eng	Power Engineer
3	F	UK	G/Non G	PG		M Comp	Software Engineer
4	M	Malaysia	G	UG		B Sc	Chemist
5	M	Vietnam	G	UG	Twinning	B Eng (Hons)	Business/technology
6	F	Sri Lanka	G	PG		M App Sc	Environmental consulting
7	M	Malaysia	G	UG	Twinning	B Eng	Mechanical Engineer
8	M	Czech Republic	G	PG		M Comp	IT Management
9	M	Malaysia	G	UG		B Eng	Civil Engineer
10	F	Malaysia	P	UG		B Eng	Engineer
11	M	Malaysia	G	PG		M Eng Mech	Automotive Industry
12	F	Hong Kong	G	UG		B Sc	Media Communication
13	F	Hong Kong	G	UG		B T (Comp)	Systems Analysis
14	F	PRC	G	11/12		11/12	Commerce/marketing
15	F	Hong Kong	G	UG		B Env Eng	Environmental Engineer
16	M	Argentina	P	PG		PhD	Entrepreneur
17	F	USA	G	UG		B Sc	Marine Products

18	M	Malaysia	G	UG	Twinning	B Eng (Civ)	Civil Engineer
19	M	Mauritius	Semi G	UG		B Eng	Electrical Engineer
20	M	Malaysia	G	PG		M B Syst	Engineer
21	M	Taiwan	P	VET		Dip IT Network Eng	Network Engineer
22	M	Malaysia	G	UG		B Eng	Chemical Engineer

3.17 SUMMARY

This study involved the distribution of a questionnaire to ten institutions (seven CRICOS providers) and data has been generated by the return of questionnaires from nine institutions (there were no responses from the tenth). Interviews have then been conducted with 20 percent of the questionnaire sample to derive additional data and information for analysis. The outcome of the questionnaire and interview samples by institution is reflected in Table 3.17-1. Careers are not necessarily logical or linear in nature, they can reflect diverse patterns. In order to reflect this diversity a multi-method approach has been used to obtain data: both quantitative and qualitative paradigms which might increase an understanding of how international fee-paying students proceed along a career path in Science and/or Engineering in Australian education and training institutions were utilised.

The questionnaire was developed with considerable collaboration from professional bodies in Australia that relate to the subject fields of Science and Engineering. In addition, consultation occurred with careers teachers, ESL teachers and international student advisors to ensure that the concept of career path was conveyed with meaning, and that an audience whose first language was not English understood the terminology and idiom with clarity. A participatory approach was used in part to enrich the study and reflect its cross-cultural nature.

This approach has allowed for a methodological triangulation to occur, through multiple data sources in the collection of data from questionnaires and interviews, together with a literature review and an analysis of international student statistical data from Australia, the UK and the USA. The approaches reflect an endeavour to sustain credibility and through what Guba & Lincoln (1989, p. 237) describe as “peer debriefing”, through presentations to the Curtin network seminars, through the presentation of papers at conferences, and through “member checks”.

Table 3.17-1 Institutions by Samples for Questionnaires and Interviews

	Ad High	B High	CC	G	TAFE Tas	CBE	Curtin	M Uni	Utas	Total
Questionnaire	3	6	1	14	2	2	29	22	31	110
Interviews	-	-	-	1	1	-	2	6	12	22

Ad	Adelaide High School
B	Banksia Park High School
CC	Charles Campbell High School
G	Glenunga High School
TAFE Tas	TAFE Tasmania
CBE	University of Canberra
Curtin	Curtin University of Technology
M	Monash University
Utas	University of Tasmania

Chapter 4

RESULTS

4.1 INTRODUCTION

This Chapter describes the results of the questionnaires and then draws on the comments of the international students at interview. The questionnaire results are reported as a whole, and then the data is cross tabulated. Some comments need to be viewed in conjunction with data provided in Appendix 9. The questionnaire data is also viewed on an institution by institution basis. Interwoven into the results are supporting comments and observations by the students.

The responses to the questionnaires were tabulated into a series of Excel tables for each question of the survey instrument to produce a set of raw data. Some of these tables gave rise to the need for further investigation. Responses from the questionnaires were also entered into one consolidated excel spreadsheet (Appendix 2) for ease of manipulation (x axis = questions, y axis = answers from each of the 110 respondents of the sample). This Excel spreadsheet was supplied electronically to the Learning Support Network Centre of Curtin University of Technology for inputting in the SPSS statistical package. Some refinement and minor manipulation of the data occurred mainly to ensure consistency. A frequency table was generated (Appendix 6) showing the number of cases (for each of the 39 questions from the questionnaire) and this was cross checked for accuracy with the raw data. Some minor correction was necessary and inconsistencies in some responses were addressed.

Data was generated from SPSS using Chi-square tests. Responses were examined for Pearson's Chi-Square, Likelihood Ratio and Linear-by-Linear Association. Pearson's Chi-Square was used to test the significance of the row and column variables. The likelihood ratio is also

a measure of 'best fit' similar to Pearson's Chi-square. The Linear by Linear Association is a measure of linear association between row and column variables (UCLA Academic Technology Services, 2004).

As a result of the total questionnaire sample size being 110, in applying the tests from the SPSS it was necessary to aggregate the data so that individual cells had a case population greater than five. The data was viewed as schools/non schools (coded INSTIT 2), all universities (coded INSTIT 3), Universities without the University of Canberra data (coded INSTIT 3), Schools compared to Universities (coded INSTIT 4) and School/non school by nationalities (coded INSTIT 5) and then a number of specific question by question cross tabulations were undertaken.

Interviews were conducted with twenty percent of the questionnaire respondents. Most of the interviews were conducted in person but a number were also conducted by telephone. The data was collated onto an Excel spreadsheet and also analysed (Appendix 7). For some students there was the need for a further contact in order to gain a clarification of their comments.

Section 4.2 gives a report on the raw data and data generated from the frequency tables from the SPSS. Section 4.3 analyses the data especially as a consequence of a cross tabulation of the data. Additional material is then introduced especially relating the findings of the questionnaire data with the total statistical information available for the international fee-paying student population in Australia. Extracts from the interview transcripts are also introduced in relation to a number of themes. The major focus of this analysis was an examination of the aggregated data by the type of institution and by gender. Interwoven with this data is information from the interviews. Section 4.4 examines the data on an institution by institution basis.

4.2 REPORTING

This Section should be read in conjunction with the Survey Instrument (Appendix 1).

4.2.1 QUESTIONNAIRE SAMPLE

The sample is made up of questionnaires completed by international fee-paying students from the University of Tasmania (28.2 %), Curtin University of Technology (26.4 %), South Australian government schools (21.8 %), Monash University (20 %), TAFE Tasmania (1.8 %) and the University of Canberra (1.8 %) (Figure 4.2-1).

An additional six questionnaires were received from Monash but were excluded. These questionnaires were returned electronically but either had unreadable text and/or the responses had not been saved and a blank response was received. Requests were sent to the respective students to resend these questionnaires again but no new response was forthcoming.

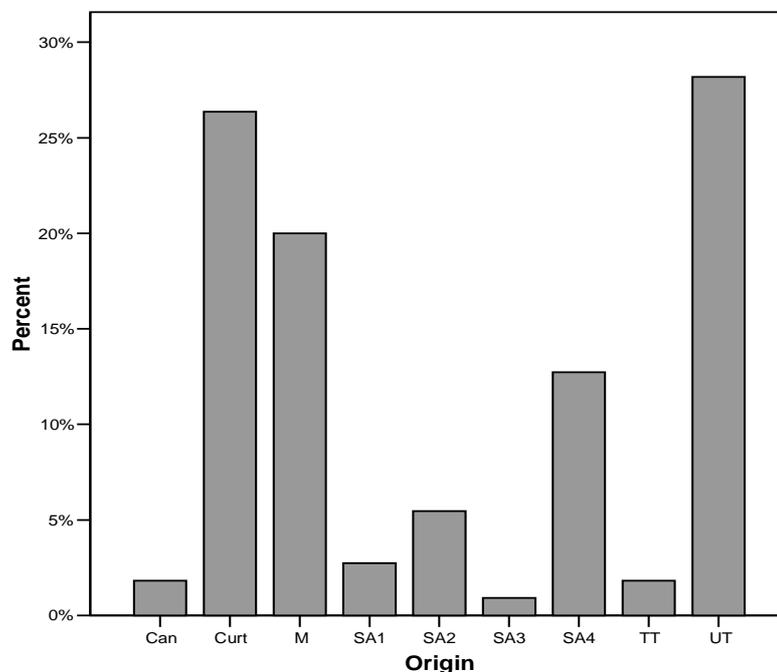


Figure 4.2—1 Origins of the Questionnaires by Institutions

4.2.1.1 *Section A: Background*

Of the questionnaire sample there was a ratio of males to females of 63:47 or males 57.3 percent females 42.7 percent. Of the sectors (Appendix 9, Table 5) males predominated in the higher education and VET sectors, while the schools sector had more female than male students. Typically courses of Science and Engineering are usually male dominated but the questionnaire sample of international fee-paying students shows only a slight male bias. The age distribution of the questionnaire sample (Appendix 9, Table 6) was 17-18 years 10.9 percent, 19-20 years 28.2 percent, 21-23 years 30 percent and greater than 24 years 30.9 percent. There were equal numbers of students in the 21-23 and >24 age groups. The >24 age group reflects the number of postgraduate students in the sample (26.6 %).

The questionnaire sample includes international students from 23 countries of origin (Figure 4.2-2). The most significant countries are the PRC, Malaysia, Indonesia and Singapore. Students from these four countries in the sample account for 61.8 percent of the total sample population. The distribution of nationalities by sector of education and training (Appendix 9, Table 7) varies considerably with the school sector sample dominated by students from the PRC while Malaysian students are most significant in the higher education sector.

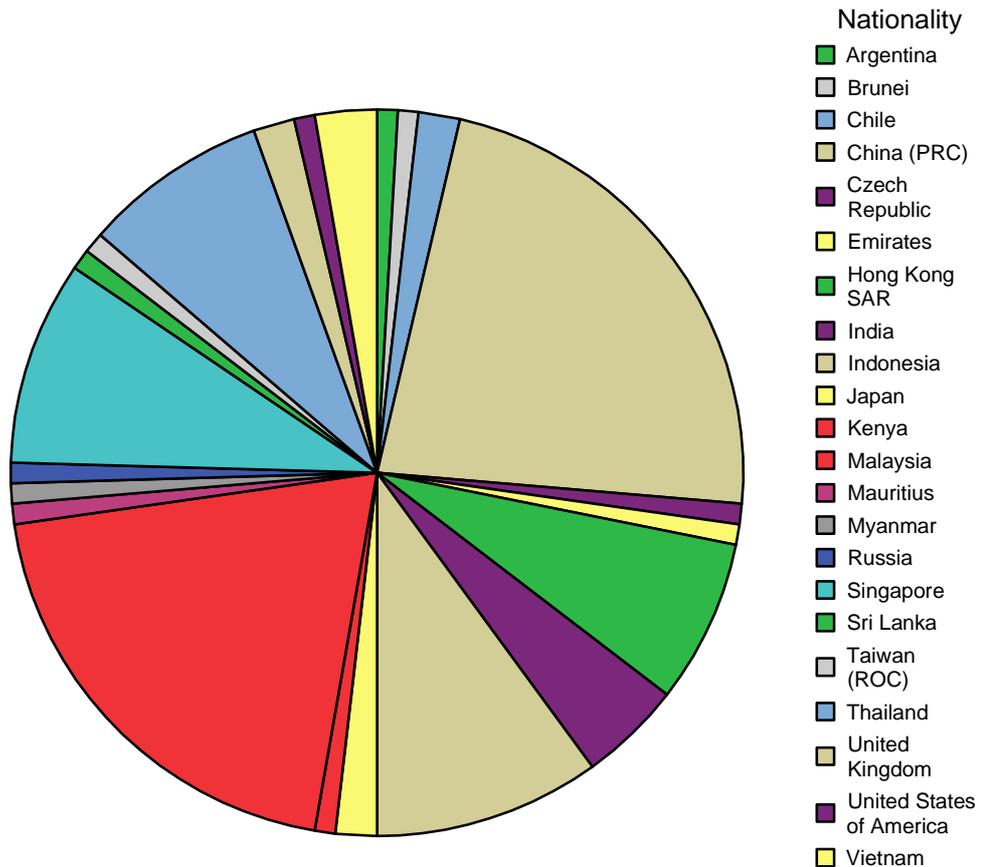


Figure 4.2—2 Countries of Origin of Questionnaire Sample

The sample included students from five states and territories (Appendix 9, Table 8). The best represented states are Tasmania (30 %), Western Australia (26.4 %), South Australia (21.8 %) and Victoria (20 %). The questionnaire sample has a higher percent of international students from Tasmania compared to its proportion of the total national data. The majority of the sample (Figure 4.2-3) was studying as undergraduate students (47.7 %). The proportion of the sample studying as secondary students is higher than that found in the total population (22.9 %), compared to 8.7 percent in 2004. The proportion of the sample studying as VET students (2.8 %) is considerably less compared to the proportion studying in this sector in the total population in 2004 (17.8 %).

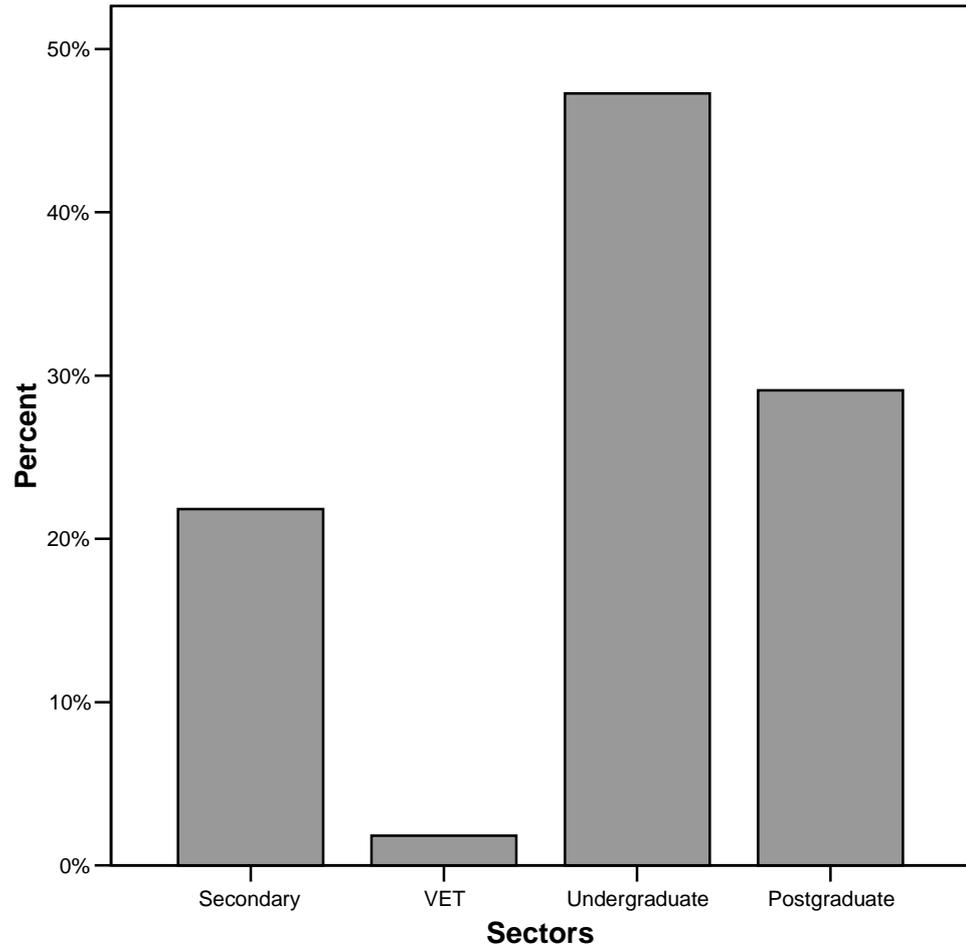


Figure 4.2—3 Questionnaire Sample by Sector of Study

The majority of Schools students (44 %) rated English as intermediate standard (Appendix 9, Table 10). The majority of Higher Education students rated English as good or advanced (52 %). English language testing is a requirement of students from the VET and higher education sectors in order to obtain their student visa to Australia. Typically a VET student would require an IELTS score of 5.0 or 5.5 and an undergraduate a score of 6 to gain a visa. This is not necessarily the case for an ELICOS and Schools sector student where they are coming to Australia to develop their English language skills.

4.2.1.2 *Section B: Educational Background*

The students had most recently completed courses (in order of significance) in Grade 11/12, undergraduate, VET and Foundation Studies (Appendix 9, Table 11). No Foundation Studies students were

directly surveyed in the questionnaire sample. In the University of Tasmania target sample, six Foundation Studies students had been included but no completed questionnaires were received. Of the higher education students 13 had completed Foundation Studies prior to their current course.

Table 4.2-1 Location of the Students' Previous Course

	Schools	VET	Higher Education	Total
Australia	13	2	26	41
Overseas	11	-	58	69
	24	2	84	110

For the questionnaire sample 37.3 percent completed their previous course in Australia and 62.7 percent overseas. The proportion coming from a previous course studied overseas was greatest in the higher education sector (Table 4.2-1). The most significant countries where students studied offshore were Malaysia, PRC, Singapore and Thailand (Appendix 9, Table 12). Of the questionnaire sample 11 of 69 responses or 16 percent of students studied their previous course offshore as part of an Australian qualification (Appendix 9, Table 13). This represented 10 percent of the total questionnaire sample. The main qualifications being studied offshore (Appendix 9, Table 14) were the Bachelor of Engineering and high school certificate programs. This would indicate that students had studied such programs as part of a twinning program.

Five institutions from the sample had offshore enrolments. Of the eleven enrolments four were in Engineering. Two enrolments (one each with a Vietnamese and an Australian based university) possibly relate to institutional twinning program arrangements. Of the eleven respondents all studied as full time students at their offshore program. Of the eleven offshore enrolments two studied by distance and nine on-campus. The major significant change cited by offshore students when they arrived onshore in Australia (seven of ten responses) was concern with the

English language (Figure 4.2-4). Other factors cited by students were changes in both teaching styles and study methods.

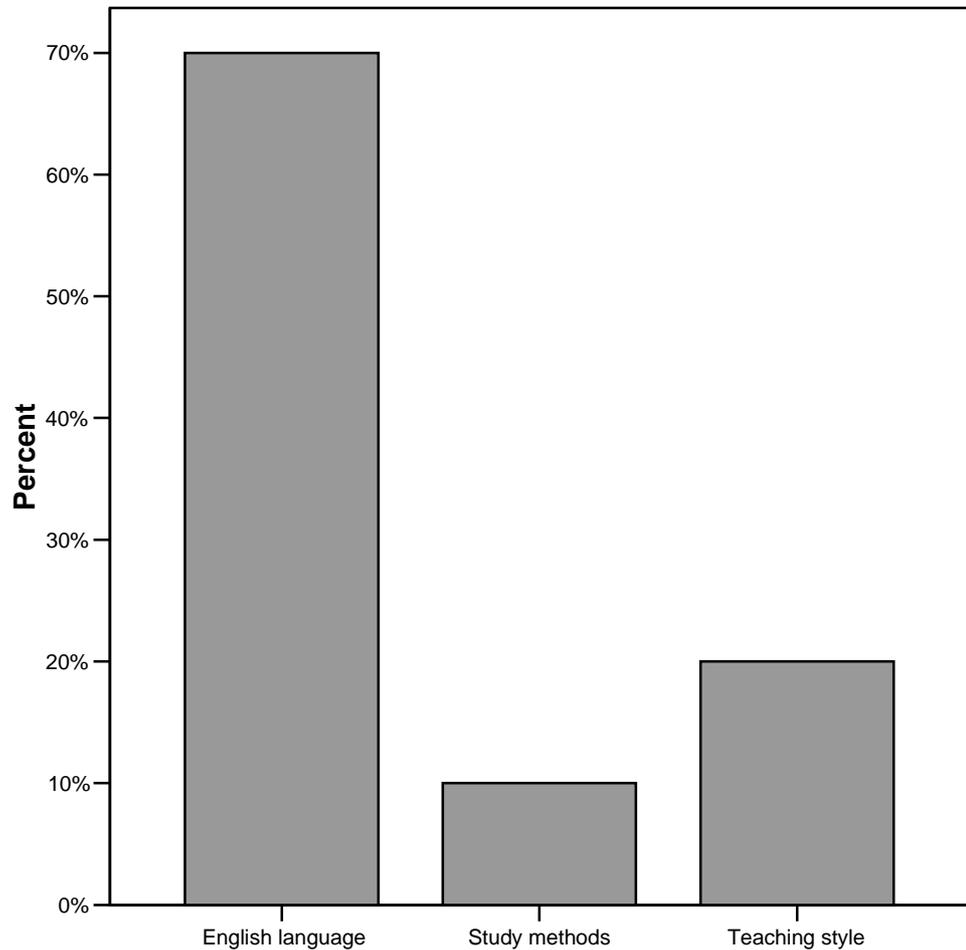


Figure 4.2—4 Greatest Concern in Changing Country

Six students rated the difficulty of course work in Australia compared to their offshore program as ‘about the same’. For four of the ten respondents the rating was ‘difficult’. Question 12 was answered by 99 respondents. Of these 68 of the 99 responses or 69 percent had undertaken a previous course with units involving Science and/or Engineering. Question 13 a. was answered by 68 respondents. The major qualifications completed in the previous course (Table 4.2-2) were the Bachelor of Science (16), Bachelor of Engineering (19) and also Foundation Studies certificates.

Table 4.2-2 Main Qualifications Achieved on Previous Course Completion

Course	Number	%
B. Science	16	24
B. Engineering	19	28
Foundation Certificate/ Pre-University	9	14
Year 12/International Baccalaureate Diploma	5	8

Of the 45 responses to question 13 b only seven involved two or more people studying at the same institution. In total 36 institutions were named by the respondents studying in the VET and higher education sectors. The total number of institutions named by students from all sectors was 48. For question 13 c of the 68 responses 64 (94 %) studied their previous course full time. For question 13 d (mode of study) of the 68 responses 66 (or 97 %) studied their previous course on-campus. For question 14 (course results) of the 67 responses 31 (or 46 %) rated their previous course results as ‘good’ and 20 (or 30 %) as ‘excellent’ (Appendix 9, Table 15).

4.2.1.3 Section C: Current Educational Studies

Of the questionnaire sample, the majority (Appendix 9, Table 16) was studying as undergraduates (48.2 %). The other significant courses represented were postgraduates (25.5 %) and Grade 11/12 (21.8 %). Of the questionnaire sample 13.6 percent commenced their course prior to the change in visa arrangements with the ESOS Act 2000. Just over half those sampled (53.6 %) commenced their current course in the year in which they were surveyed (Figure 4.2-5).

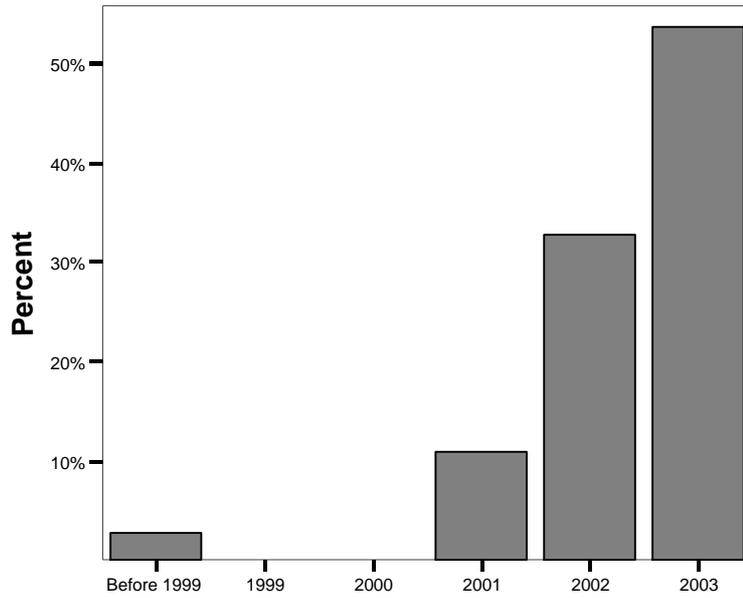


Figure 4.2—5 Course Commencement Date of the Questionnaire Sample

The main qualifications currently being studied among the questionnaire sample (Table 4.2-3) were the Bachelor of Engineering (9 %), Bachelor of Science (7 %) and the South Australia Certificate of Education (6 %).

Table 4.2-3 Major Qualifications Being Studied in Order of Significance

Qualification	Number	%
Bachelor of Engineering	10	9
Bachelor of Science	8	7
Year 12 /SACE	7	6
Bachelor of Computing	5	5
Bachelor of Engineering (Civil & Construction)	5	5
Masters of Engineering Management	5	5
PhD	4	4
Masters of Computing	4	4
Not specified	10	9

Of the questionnaire sample 86.4 percent acknowledged that they were undertaking courses in Science and Engineering (Appendix 9, Table 18). Of the ‘No’ responses of 15, nine were studying in the school sector: this was in spite of consultation having occurred with their teachers about targeting the appropriate sample group. The remaining six responses were from students studying at Monash University where the questionnaire was distributed electronically, again the questionnaire was sent by course administrators to the target audience for the sample.

Table 4.2-4 Knowledge of Credit-Transfer

	School	VET	Higher Education	Total
Yes	6		51	57
No	18	2	33	53
	24	2	84	110

Of the questionnaire sample 51 percent claims to know about the concept of credit-transfer (Table 4.2-4). For the higher education sector cases this rises to 61 percent. There were 63 responses to the question on the source of information on credit-transfer (Appendix 9, Table 19). The most significant sources of information about credit-transfer were from Course Advisor with 34 percent of responses, Agent 19 percent, Australian institution 14 percent and Teacher 14 percent. Under ‘other’ the additional responses made were “friend”, “self research”, “international student advisor”, “head of School” and the “website of Institutions”.

Introductory academic programs can involve ‘Study Skills’ or ‘Orientation’ courses. Of the questionnaire sample 40 percent attended introductory academic programs prior to their current course (Appendix 9, Table 20). There were 38 responses from those who did not attend such courses. The main reasons given by respondents for not attending an ‘introductory academic program’ were “not needed” (15), “did not know about” (4) and one response each for “in the army”, “could not get a flight”, “late entry to course”, “timetable clash” and a “lack of time”.

Despite only 43 respondents saying they attended such programs, 47 gave their views on the usefulness of these programs. Of the 47 respondents 19 described such programs as 'good', 15 as 'satisfactory', 9 as 'needs improving' and 4 as 'excellent'.

The majority of respondents 81 percent rated their course as 'satisfactory' or better (Appendix 9, Table 21). The ratings on teaching quality (in order of significance) were 'good' 40 percent, 'satisfactory' 27 percent and 'excellent' 8 percent. The ratings for the school sector were higher than those for other sectors with 70 percent of respondents giving ratings of 'good' or 'excellent'.

Of the 110 responses 89 (or 81 %) rated their institution as 'satisfactory' or better (Appendix 9, Table 22). Two respondents rated their institution as 'unsatisfactory' and 18 (or 16 %) as 'needs improving'. Satisfaction with institutions were rated more highly by students from the school sector with 70 percent rated their institution as 'good' or 'excellent' compared to 46 percent of higher education students giving the same ratings. Of the institutions both Monash University and the University of Tasmania received one response each rating them as 'unsatisfactory'. A higher proportion of University of Tasmania students rated this institution as 'needs improving' compared to the other institutions in the sample.

The electronic distribution of questionnaires to Monash students incorporated an amended design of the questionnaire. The amended design only allowed respondents for question 25 to put a cross in the box on the form and did not allow for numbering one to five (as a rating of importance required by the question). This problem was not identified until completed questionnaires were received. The Monash University respondents were able to place crosses in response boxes but not mark their preferences with numbers. Appendix 9, Table 28 summarises the 50 responses marked but no order of preference can be determined. For

Monash respondents 'teachers/lecturers' rated numerically as most important aspect of the course, followed by 'facilities' and 'relevance of course materials'.

Responses on 'Teachers/lecturers', 'Facilities', 'Student advisor/support services' 'Relevance of course materials' and 'Additional assistance with English' were ranked one to five for each institution. Each respondent could rank up to all five options with the scale of one to five (one being most important). Appendix 9, Tables 23 – 27 are an aggregation of up to 88 respondents' answers. (The Tables 23 to Table 27 in Appendix 9 excludes responses from Monash University students. Appendix 9, Table 28 records only the 22 Monash responses.) Respondents ranked teachers/lecturers as most important. This variable was ranked one (most important) by 55 of 75 responses (63 %). The relevance of course materials was the second most significantly ranked one variable with 12 responses. The third variable ranked one was facilities (ranked 1 by 8 respondent). Of the first ranked variables student advisors/student services were ranked one by only 3 respondents. Variations across sectors indicate that school respondents did not rank facilities as significant as other sectors. Additional aspects valued by respondents and added to question 25 were; "practical skills" (2 responses); "application of studies" (2 responses); and one response each in "English for specific purposes", "society", "study of environment", "preparation of exams", "course content", "relevance of skills to the workplace", "food", "international office", "duration of the course"; "research guidance/supervisor" and "settlement assistance".

Over 54 percent of respondents rated their anticipated final result (Appendix 9, Table 29) as 'good' or 'excellent'. Across sectors, 65 percent of school sector students rated their expected results as 'good' or 'excellent' but just over half of higher education students rated their expected results as 'good' or 'excellent'.

As shown in Appendix 9, Table 30, 53 percent of the questionnaire sample had determined that their qualification was recognised in their home country by the relevant professional body/society. The percentage that did this in the higher education sector was considerably greater than the school sector (21 % compared to 61 %). The main sources of advice (Appendix 9, Table 31) were home country authorities (23.6 %) and Australian Education Centres (18.2 %).

A respondent to the questionnaire could give more than one answer for participation in extra-curricula course activities (Figure 4.2-6). Almost half of the sample was involved as participants in societies or clubs (49.2%). Nearly one third (31.7 %) were involved in work experience, while competitions and conferences ranked equal in significance (20.6 %).

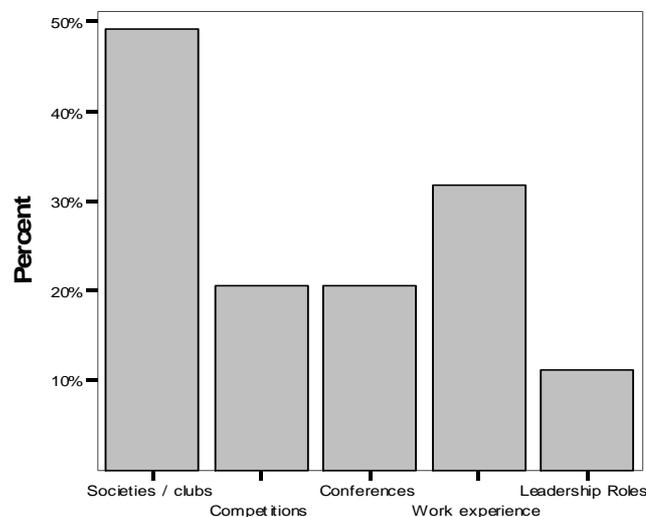


Figure 4.2—6 Participation in Extra Curricula Activities Related to Course of Study

4.2.1.4 *Section D: Future Educational Studies*

The majority of the questionnaire respondents (58 %) were planning to remain in Australia for future studies (Appendix 9, Table 33). For those studying in the school sector 100 percent of students are intending to remain in Australia. For those students planning to return home at the end of their current studies (Appendix 9, Table 34) the main reasons given were to pursue employment/business (53 %) and student visa expired (36 %). Other reasons given included being unable to meet course requirements, too much stress, not enough points for permanent residence and lifestyle not suitable.

Respondents indicated their future study plans (Appendix 9, Table 35) as being postgraduate studies (34.5 %) and undergraduate studies (18.2 %) for the total questionnaire sample. For those responses where ‘no’ was given to future formal study plans (Appendix 9, Table 36) the two main reasons given for not completing formal Australian qualifications were “financial constraints” (3 responses) and “going to the USA” (2 responses). Other ‘no’ responses (one each) were: “wants to obtain experience”, “one PhD enough”, “gaining employment”, “Australian qualification not useful”, “all that can be afforded”, “enough studying” and “lazy”. For those continuing (answering yes) the main qualifications being pursued were PhD (10), Masters (7), MBA (6) and postgraduate – unspecified (5).

4.2.1.5 *Section E: Career*

Of the questionnaire sample 68.2 percent of respondents stated that they did not have career preparation or counselling in their home country before coming to Australia whilst 25.5 percent did, whilst 6.4 percent did not specify an answer (Appendix 9, Table 37). The proportion responding ‘no’ was higher in the school sector (81 %) compared to those in higher education (70 %).

In all, 42 careers were stated as the intended careers of the questionnaire sample of 95 respondents who answered this question. Some areas stated related to industry areas rather than a specific occupation. Table 4.2-5 indicates the more significant careers indicated by respondents. If engineer (9), civil engineer (4), chemical engineer (2), construction engineer (1), electrical engineer (2), environmental engineer (1), mechanical engineer (4), power engineer (1), project engineer (1), sales engineer (1) and telecom/network engineer (1) are grouped together this accounts for 27 respondents (or 28 %) of the sample. Likewise if computing (4), computer programmer (1), computer communication (1), IT (3) software development (3), and systems analyst (1) are grouped together this field accounts for 16 responses (or 17 %). Science encompassed the following intended occupations; biomedical scientist (2), chemical scientist (3), chemist (2), dietician (1), environmental consultant (1), medicine (3), nutritionist (1), physicist (1), scientist/microbiologist (2) and zoologist (1) or 18 (19 %) of the sample.

Table 4.2-5 Principal Intended Careers

	School	VET	Higher Education	Total
Engineer	1		8	9
Research	2		7	9
Business	4		3	7
Computing			4	4
Civil Engineer			4	4
Mechanical Engineer			4	4
Chemical scientist	1		2	3
IT			3	3
Lecturer			3	3
Manager	1		2	3
Medicine	3			3
Software Development			3	3
Others	4		33	37
Undecided/Not specified		2	1	3
Total	16	2	77	95

Of the questionnaire sample six (or 5.5 %) did not see that their current course matched their career intention. Conversely 16.4 percent rated their career and course match as ‘very well’, 37.3 percent ‘fairly well’ and 39.3 percent as ‘reasonably well’ (Table 4.2-6).

Table 4.2-6 Relevance of Current Course to Career Intention

	School	VET	Higher Education	Total
Very well	6		12	18
Fairly well	8	1	32	41
Reasonably well	7		35	42
Not at all	2	1	3	6
Not specified			2	
	23	2	84	109

From the questionnaire sample 58 percent accessed the career advice available at their current institution (Appendix 9, Table 38). For students studying in the school sector this was greater (60 %) than higher education (55 %). Of the sample, 14 (or 21 %) of respondents identified careers advice needed improvement or was unsatisfactory (Appendix 9, Table 39). Thirty seven additional comments (Table 4.2-7) were made by the questionnaire sample members, the main points made being in relation to “fees being too expensive” (13 %) and “the need to adjust teaching/materials to international students” (10 %).

Table 4.2-7 Other Comments

Q39 Other comment				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	80	72.7	72.7	72.7
Best.	1	.9	.9	73.6
Challenging	1	.9	.9	74.5
Classes too large	1	.9	.9	75.5
Course fees rising too much	1	.9	.9	76.4
Course very hard	1	.9	.9	77.3
Ed Institute is making money mainly	1	.9	.9	78.2
Fee too high for standard of faculty	1	.9	.9	79.1
Freedom!	1	.9	.9	80.0
Freedom! Good!	1	.9	.9	80.9
Good but too much theory over practice	1	.9	.9	81.8
Good, stable ed system.	1	.9	.9	82.7
Hard to adjust to Aus teach approach	1	.9	.9	83.6
I learn a lot during my study in Aus	1	.9	.9	84.5
Is very good. Enjoyed study.	1	.9	.9	85.5
Lecturers need to improve communication skills.	2	1.8	1.8	87.3
More contact hrs, slower pace teaching	1	.9	.9	88.2
Need improv in teaching. More prac	1	.9	.9	89.1
Need more support for Internat stds	2	1.8	1.8	90.9
Need to be more aware of Int Stud knowledge (or lack thereof)	1	.9	.9	91.8
Needs improvement.	3	2.7	2.7	94.5
Not prac enough	1	.9	.9	95.5
Please do not raise school fees.	1	.9	.9	96.4
Satisfactory	1	.9	.9	97.3
Too expensive	2	1.8	1.8	99.1
Want to study more subject next yr	1	.9	.9	100.0
Total	110	100.0	100.0	

For the total sample of 110 students 52 respondents (or 47 %) indicated their availability for further contact to discuss their views on Australian education and training. Appendix 9, Table 40 outlines the spread of responses and this shows that the spread was even across all sectors.

4.2.2 INTERVIEW SAMPLE

Section E of the questionnaire invited respondents to give their contact details. Of the questionnaire sample 52 respondents (or 47 % of the sample) gave their contact details for further discussion on the Australian education and training system (Appendix 9, Table 40). Initial email contact was made with the students to see if they were interested still in participating in an interview. Approximately ten months had passed since the respondents had completed their questionnaires. A number of emails

'bounced back' and were not delivered, as was the case with seven students (from Curtin, Monash universities and South Australian schools). Contact was not able to be established with other students. Of the sample, nine were interviewed in person, 11 by telephone and two elected to make a written submission (Case 9 and 11). Case 20 provided additional written comments as well as being interviewed.

The interviewees were asked a set of focus questions (Appendix 4) which were intended to provide a framework for a narrative with the student. The questions related to major themes of the questionnaire as well as inviting the students to make an overall comment on their experiences with the Australian education and training system. Transcripts of the interviews are included in Appendix 10.

The interview sample consisted of 22 cases from five institutions (Figure 4.2-7), namely the universities of Curtin, Monash and Tasmania, TAFE Tasmania and Glenunga International High School. The interview sample was composed of 14 males and 8 females. The sample represented 11 countries (Malaysia 10, Hong Kong SAR 3, and one each from Argentina, the Czech Republic, Mauritius, and the People's Republic of China, Sri Lanka, Taiwan, the United Kingdom, the United States of America and Vietnam). At high school the majority of the interview sample had attended government schools (17 cases compared to five cases at a private school). One of the government high school students subsequently transferred to a private international high school in his second year. The sample represented postgraduate, undergraduate, VET and Grade 11/12 students. The sample was composed of undergraduates 14 cases, post-graduates six cases, VET one case and Grade 11/12 one case.

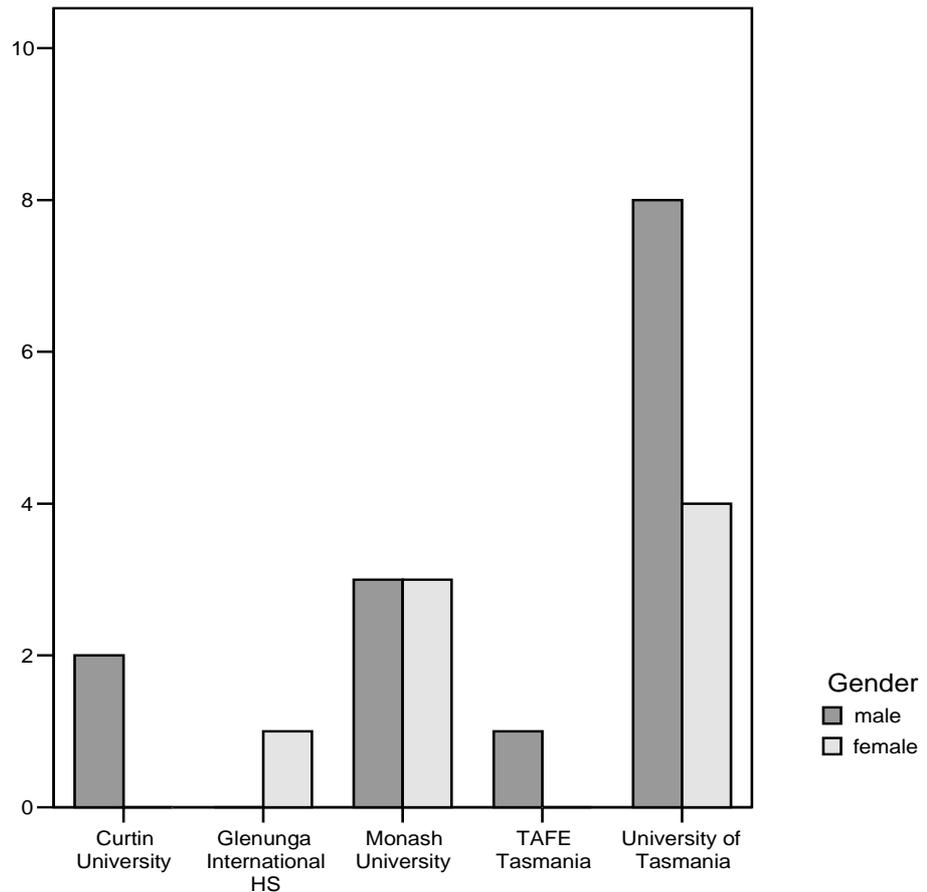


Figure 4.2—7 Distribution of Interview Sample by Institution and Gender

The interview sample was spread across the four visa subclasses (571, 572, 573 and 574 - Appendix 9, Table 43). By the time the interview was conducted the school visa subclass Case had progressed on to being an undergraduate, the VET student had become an undergraduate and two students had completed their course (and in one instance had returned to their home country). The sample included three students who had participated in Australian studies as a consequence of a twinning program.

The majority (40.9 %) of the interview sample rated themselves as having a good standard of English (IELTS 7) as evident in Appendix 9,

Table 44. A further 27.3 percent of the sample rated themselves as having an advanced (IELTS 8-9) standard of English. A further 31.8 percent rated their standard of English as either intermediate (IELTS 5.5-6) or needs improving (IELTS 4-5).

From the qualification currently being undertaken by the students, the majority (10) were completing an Engineering qualification with five each in Science and Computing. The other two cases were grade 11/12 and a PhD. The career outcomes can be summarised as engineer (12), scientist (4), business (3), computing (2) and media (1). From time to time it was necessary to go back to the interviewees for additional information and /or to clarify their answers.

4.3 ANALYSIS

The questionnaire responses were entered onto an Excel spreadsheet which was inputted into the SPSS software package. The origin column reflects the institutions (and coding of the institutions) in which the students were enrolled: M = Monash Uni, SA1 = Adelaide High School, SA2 = Banksia Park High School, SA3 = Charles Campbell Secondary School, SA4 = Glenunga International High School, UT = University of Tasmania, Can = University of Canberra, Curt = Curtin University and TT=TAFE Tasmania.

The data transferred from Excel to SPSS without a problem and counts were made to check the accuracy of the data. A frequency distribution table was completed also to aid cross checking and verification of data. A number of anomalies were addressed and as a result the data was screened and cleaned to address these anomalies and a new set of SPSS data tables generated. The main anomalies involved were: for the University of Canberra one questionnaire indicated 572 (VET) in Question 5 but subsequent answers in Question 7 indicates undergraduate 573; for the University of Tasmania one questionnaire indicated 571 Secondary school in Question 5 but a subsequent answer in

Question 7 indicates postgraduate 574; for Glenunga International High School one questionnaire had Section D (questions 30 – 33) and E (questions 30 – 39) missing. A number of bivariate tables were constructed commencing with one derived by institutions. Quite quickly it was recognised that the cell count was too low in the case a number of variables. One course of action was to amalgamate groups of responses to reduce the spread. That was easily addressed in the SPSS, so appropriate groups were identified to be combined.

4.3.1 FREQUENCY TABLES

The following tables (Table 4.3-1) give the number of valid cases by question for the questionnaire sample and were derived from the SPSS software package. For question 25 tables V36, V37, V38 and V39 were constructed to show the respective ranking scale given by respondents for this question. These tables were constructed to take account of the difficulties that arose with the electronic distribution of the questionnaire to Monash students for question 25.

Table 4.3-1 Frequency Responses for The Questions from The Questionnaire

Statistics		
	N	
	Valid	Missing
origin	110	0
q1 Gender	110	0
q2 Age	110	0
q3 Nationality	110	0
q4 State/Territory	110	0
q5 Current Study	110	0
q6 Level of English	110	0
q7 Recent course completed	109	1
q8 where was course completed	110	0
q8coun Where did recent course	110	0
q9a If Overseas - Aust qual?	69	41
q9b What Qual	11	99
q9c Institution	110	0
q9d Full/Part Time?	11	99
q9e How studied	11	99
q10 Rate your success	11	99
q11a Greatest concern in changing study country	10	100
q11b How have you found the course work	10	100
q12 Course involve study in science / engineering	99	11
q13a If Yes in 12, what qual?	68	42
q13b From which institution	110	0
q13c Full/Part time	68	42
q13d How studied	68	42
q14 Result	67	43
q15 Course currently	110	0
q16 When commence current course	110	0
q17 Name qual in 15	110	0
q18 Course units in science / engineering?	110	0
q19 Do you know what credit-transfer is	110	0
q20 Who explained credit transfer	52	58
q21 Did you undertake Intro Academic Program	108	2
q21b If no, why	110	0
q22 Rate Usefulness	47	63
q23 Rate quality of teaching	109	1
q24 Rate your satisfaction with institution	109	1

Statistics

	N	
	Valid	Missing
q25.1 Most important aspect	88	22
q25.2 second important aspect	63	47
q25.3 third important aspect	60	50
q25.4 fourth important aspect	57	53
q25.5 fifth important aspect	55	55
q25oth other aspects important to you	110	0

Statistics

	N	
	Valid	Missing
q26 Anticipated Final result	109	1
q27 Course recognised in home country	108	2
q28 If yes in 27, how did you find out	54	56

Statistics

	N	
	Valid	Missing
q30 Will you remain in Aust for future studies	108	2
q31 If no, why	45	65
q32 If yes, what are study plans	63	47
q33 Further form qual	98	12
q33a If yes, what	110	0
q33b If no, why	110	0
q34 Career prep / counselling in home country	103	7
q35 Intended career	110	0
q36 How well will your course prepare you	107	3
q37 Current institution provide career advice	109	1
q38 If yes, how effective	63	47
q39 Other comment	110	0
followup available to discuss views on FET	59	51

4.3.2 CROSS TABULATIONS

The first set of questions examined for an association were question: 5, 10, 14, 15, 16, 27, 34, 35 and 36. These questions covered the variables of sector of study, rating success in course, result for previous course, current course of study, when commenced the current course, recognition of current course by a professional body, career preparation before coming to Australia, intended career and how well the current course prepared the student for their intended career. An initial collation of raw data suggested that these questions required further examination at the outset and might provide an preliminary ‘snapshot’ of responses to the full list of questionnaire.

The following cross tabulations were conducted:

- Cross tabulation by Institution by origin
- Cross tabulation by gender
- INSTIT 2 – Schools and Non schools
- INSTIT 3 – All Universities
- INSTIT 3 – Universities without Canberra
- INSTIT 4 – Schools and Universities
- INSTIT 5 – Schools/non schools by Nationalities

The cross tabulations involved a refining of data. For instance with the cross tabulation by gender it was obvious that the responses in many cells would be less than five and therefore not statistically reliable. It was resolved to aggregate data where appropriate into sets of data, for example grouping the school data together and university data together for analysis. For similar reasons the TAFE data and University of Canberra data was excluded (this involved a sample of two cases for both institutions) on some variables.

4.3.2.1 *INSTIT 2 – School/Non school*

The following questions are highlighted because they had a significant cell count.

Q8 With reference to your answer in Question 7, where was this course completed?

In question 7 the respondent was asked to state the type of previous course they had studied. Of the sample of 69 respondents (62.7 %) answered that they had completed their previous course overseas (Table 4.3-2). A higher proportion of the sample from non school institutions had recently completed a course overseas compared to the school sector sample. This equated to 52.7 percent of the total sample of 62.7 percent. School students arrive in Australia in time to potentially complete Grade 10, 11 and 12 and then go onto further education. The non school group would have most likely completed a qualification overseas before arriving in Australia. The data shows a significant difference between the school and non school individuals.

Table 4.3-2 Previous Courses by School and Non School Sectors

	School %	Non school %	Total %
Overseas	10.0	52.7	62.7
Australia	11.8	25.5	37.3

Q 19 Do you know what Credit-transfer is?

Of the total sample only 51.8 percent (n = 57) were able to answer yes. Of these 86 percent were from the non school group and 14 percent from the schools group of institutions. This level of response can be expected as the knowledge of credit-transfer is more likely to be a product of attaining a higher level of study. It also reflects that some of the sample had started their courses offshore and then transferred onshore to complete a qualification. Those students who had completed a VET or a Foundation Studies qualification are likely to have a greater knowledge of credit-transfer. Schools students are likely to have just been exposed to

this concept having just started school in Australia. The data shows a significant difference between the school and non school individuals.

Q 21 Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

Of the sample only a minority 43 (39.8 %) were able to respond 'yes'. The non school response was 74.4 percent while the schools response was 25.6 percent. It is more likely that such programs are available in tertiary institutions. Such programs are less likely to be offered in a schools setting as by their nature schools are able to incorporate the elements of transition from an offshore situation to onshore for English language exposure and acculturation within main stream programs. The data shows a significant difference between the school and non school individuals.

Q34 Did you have any career advice or counselling in your home country before coming to Australia?

A higher proportion of the total sample responded 'no' for this question (72.8 % compared to 27.2 %). Within the 'no' responses, 76 percent were from non schools institutions. For the sample that answered 'yes', the higher percent was in the non school set (85.7 %). For the schools student it is more likely that they will receive their careers advice whilst in Australia. The data shows a significant difference between the school and non school individuals.

Q37 Did your current institution provide you with career advice?

Of the total sample, 57.8 percent responded that they availed themselves of career advice in their current institution. The proportion undertaking this was higher amongst the school sample compared to the non school sample (60.9 % compared to 57.0 %). This suggests that the students in the schools institutions were availing themselves of careers advice in Australia possibly because of the ease of access to such advice.

4.3.2.2 *Cross tabulation by Institution by origin*

Q3 Nationality

For the sample as a whole the most important countries of origin were the PRC, Malaysia, Indonesia, Singapore and Thailand. By institution the following nationalities were a significant part of the sample population: the PRC - Banksia Park High (6), Glenunga International High School (11), and PRC-Hong Kong - Monash University (5), India - Monash University (4), Indonesia - Curtin University (10), and Malaysia - University of Tasmania (13).

Q 11 a What has been your greatest concern in changing from your home country to study in Australia?

This question was aimed at students who had studied offshore for an Australian qualification and who had now moved onshore. Of the sample, 10 respondents were involved moving onshore with their courses. English language not only stood out as a concern in general with seven responses but also a particular concern for respondents from Curtin University.

Q13a If you answered 'yes' in Question 12, what qualification did you obtain?

This question related to the qualification obtained by the student in their previous course. There were 68 responses to this question. Of these responses the 'Other' category was the most common response (45.6 %); this was followed by the Bachelor of Engineering (27.9 %), Bachelor of Science (23.5 %) and Bachelor of Science/Engineering (2.9 %).

Q15 What course are you currently doing?

Table 4.3-3 Universities by Postgraduate and Undergraduate Populations

Institution	Sample (n)	Postgraduate %	Undergraduate %
Canberra	2	100	-
Curtin	29	41.6	58.6
Monash	22	40.9	59.1
Tasmania	31	25.8	74.2
mean		52.1	63.96

This question related to the current course of study. There were 110 responses. The above table (Table 4.3-3) summarises the postgraduate / undergraduate split for the four universities in the sample (n = 84). The proportion of undergraduates in the sample was greatest at the University of Tasmania (74.2 %) whilst the proportion of postgraduates was greatest at the University of Canberra (100 %) but the sample size was small.

Q18 Does your course involve units in Science and /or Engineering?

The cross tabulation confirms that the Universities of Canberra, Curtin and Tasmania samples are drawn from a Science and Engineering population with 100 percent of each of the respondents at these institutions answering 'yes'. In the sample from Monash University six cases of the 22 answered 'no'. Here the questionnaire was distributed to the target audience electronically by the International Office of Monash. Of the six cases which appear to be an exception one had completed a Bachelor of Engineering and one a Bachelor of Science. In both cases they were currently studying higher degrees: a Masters of Business System and a PhD respectively. Of the remaining four cases, three were currently studying a Masters of Business Systems and one a Bachelor of Business System. These responses may have come about because of the wording of the question. Elsewhere in the questionnaire and in the attached information sheet it was explained that the Science subject field

also included Computing. This may not have been apparent to these six cases when they answered this specific question.

Q 23 How would you rate the quality of teaching with your current course?

Table 4.3-4 Quality of Teaching by Selected Institutions

Institution	Excellent %	Good %	Satisfactory %	Needs Improving %	Unsatisfactory %
Curtin	10.3	41.4	27.6	17.2	3.4
Glenunga	21.4	57.1	14.3	7.1	0
Monash		31.8	22.7	40.9	4.5
Tasmania	3.2	35.5	38.7	19.4	3.2

n = 96

For universities a higher proportion of the Curtin sample rated the quality of teaching as ‘excellent’ and ‘good’ compared to the samples from Monash and Tasmania (51.7 %, 31.8 % and 38.7 % respectively refer Table 4.3-4). The Monash sample indicated a higher proportion of the sample rating teaching as needing improving and/or unsatisfactory. Overall the Glenunga International High School sample rated the quality of teaching aggregating the ‘excellent’ and ‘good’ variables very highly at 78.5 percent.

Q 29 During your current course have you participated in: societies or clubs in your institution; competitions relating to your course; conferences; relevant work experience, and other leadership positions?

There were 63 responses to this question. Of all the responses participation was greatest in societies or clubs (49.2 %), work experience (31.7 %), competitions (20.6 %), conferences (20.6 %) and leadership positions (11.1 %). Excluding small samples from some institutions, the participation in clubs and societies was greatest with the respondents

from the University of Tasmania (84.2 %), and conferences were cited by 42.1 percent of Curtin students.

4.3.2.3 *INSTIT 3 – All Universities*

The cells were adversely affected by the sample size of two from the University of Canberra hence it was necessary for a new set of data to be generated (Universities without Canberra).

4.3.2.4 *INSTIT 3 – Universities excluding Canberra*

Q 1 Gender

Table 4.3-5 Gender - Curtin, Monash, Tasmanian Universities

	Curtin %	Monash %	Tasmania %	Mean %
Male	62.1	45.5	64.5	58.5
Female	37.9	54.5	35.5	41.5

There were 82 responses after excluding non university and the University of Canberra sample. There were more males in the University of Tasmania sample and more females in the Monash University sample (Table 4.3-5). This gender difference in the sample may also relate to the type of course being undertaken by sample members from each of these institutions. The data shows a significant difference.

Q 7 Most recent course completed

Table 4.3-6 Recent Course Completed by Selected Institutions

	Curtin	Monash	Tasmania	Total
Grade 11/12	2	4	5	11
Vocational Certificate	10	5	6	21
Undergraduate	5	10	12	27
Foundation Studies	6	3	4	13
Other	5	0	4	9
Total	28	22	31	81

This question related to the individuals educational background. Table 4.3-6 of frequency counts outlines the previous courses undertaken by the students in the Curtin, Monash and Tasmanian samples. Of the 81 responses, a higher proportion of the Monash sample had just completed an undergraduate course whilst a larger proportion of the Curtin sample had previously completed a VET qualification.

Q 8 With reference to your answer in question 7, where was this course completed?

The number of responses was 82 and of these 69.5 percent had most recently completed their previous course overseas compared to those who had completed it in Australia. Of the samples from Curtin, Monash and Tasmania the highest percent completing a course overseas was from Tasmania (77.4 %) whilst the highest proportion within Australia was Monash (36.4 %). This may relate to the higher proportion of the Monash sample being drawn from postgraduate students. The data was significant.

Q 19 Do you know what credit-transfer is?

The number of responses was 82. Of the sample 48 (58.5 %) answered 'yes'. Of the 'yes' responses the Monash sample indicated a higher level of knowledge about credit-transfer (63.6 %) whilst the Curtin sample indicated a higher degree of uncertainty because of the level of 'no' responses. This may relate to the higher degree of the Monash sample being postgraduates and possibly gaining a greater familiarity with the nature of the Australian education and training system. The data was significant.

Q 21 Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

There were 81 responses to this question. Of these a minority (37 %) answered 'yes'. The Curtin sample indicated a higher degree in the

affirmative (60.7 %) and the Monash sample the highest level of non participation in such programs (77.3 %). As the Monash sample was drawn more from postgraduate students, such programs most likely were not seen by the student as relevant to them. The data was significant.

Q27 Is this course recognised by a Professional Body or Society in your home country?

This question related to the current course of study. There were 82 responses. Of these the majority answered 'yes' (62.2 %). More of the Tasmania sample responded 'yes' (83.9 %) compared to Curtin (58.6 %) and Monash (36.4 %). This may be in part a reflection of the types of courses being undertaken by the samples from the respective institutions.

Q 30 Will you remain in Australia for future studies?

This question related to future educational studies. There were 81 responses. Of the responses the majority (53.1 %) answered 'no'. For the 'yes' responses, the University of Tasmania sample had the highest response level (60.0 %) and Monash the lowest response (31.8 %). For the Curtin sample the result was 44.8 percent. Given that the Monash sample was composed of more postgraduate students it was less likely that these students might remain in Australia to continue their studies. The data was significant.

Q 33 Will you add to your Australian Qualification by undertaking further formal qualifications?

There were 74 responses to this question. Of these responses 46 (62.2 %) answered 'yes'. The 'yes' response was highest from the Curtin sample (75 %) and lowest from the Monash sample at 52.4 percent. As the Monash sample was composed of a higher proportion of postgraduates this was to be expected. The data was significant.

Q 34 Did you have any career preparation advice or counselling in your home country before coming to Australia?

There were 78 responses to this question. A minority of the sample respondents answered 'yes' (29.5 %). Of the sample Tasmania rated more highly in 'yes' responses (34.5 %) and Monash the lowest (18.2 %) with Curtin between them (33.3 %). The data was significant.

Q 37 Did your current institution provide you with career advice?

There were 82 responses to this question. Of these 45 (54.9 %) answered 'yes'. The 'yes' response was highest at Tasmania (74.2 %) and lowest at Curtin (41.4 %) with Monash (45.5 %) between them. The Tasmanian sample had the highest proportion of undergraduate students. It may be that such career programs are more focussed on undergraduates. The data was significant.

4.3.2.5 *INSTIT 4 – Schools and Universities*

Most of the cross tabulations were not statistically valid because there were less than five cases in each cell.

Q 30 Will you remain in Australia for future educational studies?

There were 106 responses for this question. For schools there were 23 responses (21.7 %) of the total sample, presenting a 100 percent 'yes' response rate to this question. It is likely that this group of individuals had more recently arrived to embark on their experience of the Australian education and training system in comparison to the remainder of the sample.

4.3.2.6 *INSTIT 5 – School/non school by Nationalities*

Most of the cross tabulations were not statistically valid because there were less than five cases in each cell. The aggregation of data resulted in the schools group having 24 responses and the non schools group 86 responses.

Q1 Gender

The sample was composed of more females in the school sector (54.2 %) and more males in the non-school sector (60.5 %).

Q 8 With reference to your answer in Question 7, where was this course completed?

This question related to the educational background of the student. There were 110 responses to this question. A higher proportion of the non school group completed their course overseas compared to the school group (66.3 % compared to 45.8 %). A number of the school group was studying in at least their second year in Australia. The data was significant.

Q 12 Did this course involve units of study in Science and /or Engineering?

For this question there were 103 responses. Of the valid responses 72 answered 'yes'. A higher proportion of the non school group responded 'yes' compared to the school group (80.2 % compared to 31.8 %). It may have that the school group were confused by the mention of Engineering in this question.

Q19 Do you know what credit transfer is?

The total sample answered this question. Responses were equally split 50:50 percent yes/no. A higher proportion of the non school group responded yes compared to the school group (57 % compared to 25 %). This is more likely to be the product of greater familiarity of the education and training system by virtue of the level of study that students had attained.

Q 21 Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

There were 108 responses for this question. Of these responses 43 (39.8 %) answered that they had undertaken such programs. A higher proportion of school students responded 'yes' compared to the non school group (47.8 % compared to 37.6 %). The data was significant.

Q 27 Is this course recognised by a Professional body or Society in your home country?

There were 104 responses to this question. Of these 58 (55.8 %) responded 'yes'. A higher proportion of non school students responded 'yes' compared to the school sample (64.6 % compared to 22.7 %). As such it is more likely that students at a more advanced level in their studies would have researched the recognition requirements of their course for a professional body.

Q 30 Will you remain in Australia for future educational studies?

This question was addressed to the student to elicit future study plans. There were 108 responses to this question. Of these responses 63 (58.3 %) responded 'yes'. The school group sample responded 'yes' with all responders saying 'yes' (100 %) compared to 47.1 percent for the non school group. It was more likely that the school group having made the decision to come to Australia to complete their secondary education were more likely to plan to stay here longer to continue to the next level of their education.

4.3.2.7 *Cross tabulation by Gender*

Q 6 Level of English and Gender

The total sample completed this question. In responding to this question with the answer 'English needed to improve' more of the respondents were female than male (57.9 % compared to 42.1 %). More males rated their English as 'good' compared to females (75 % compared to 25 %). For the 'advanced' category there were eight responses each. While for

the 'intermediate' category they were similar with 23 and 20 responses for males and females respectively. The data was significant.

Q 8 With reference to your answer in Question 7, where was this course completed?

This related to the educational background of the student. Of the total sample 69 (62.7 %) responded overseas and the remainder in Australia. More males as a percentage of the respondents (66.7 % compared to 57.4 %) had most recently completed a course of study overseas. The data was significant.

Q12 Did this course involve units of study involve in Science and / or Engineering?

Of the sample 99 respondents answered this question. The majority of the sample (68.7 %) had studied their previous course as a course in Science and /or Engineering. The proportion of responses answering 'yes' was greater from males (78.2 %) compared to females (56.8 %). Some confusion may have arisen with schools students and some IT students because of the way the field of study was described and this could have contributed to the response level of 'no'. The data was significant.

Q 13A If you answered 'yes' in Question 12, what qualification did you obtain?

This question related to the educational background of the student. There were 68 responses. The largest response was for the 'other' category 31 followed respectively by Bachelor of Engineering 19, Bachelor of Science 16 and Bachelor of Science/Engineering two. For the Bachelor of Engineering 78.9 percent of the sample were males while for the Bachelor of Science 56.3 percent of the sample were females. For the 'other' category a greater proportion was female while the two Bachelor of Science / Engineering students were male.

Q16 When did you commence your current course?

The total sample answered this question. Of the sample 53.6 percent commenced their course in 2003 (the year the questionnaire instrument was administered). From the questionnaire sample nine females compared to six males had been studying their course in 1999 and 2001 (or 13.6 percent of the sample) commenced in or prior to 2001. No individuals of the sample indicated commencing their course in 2000.

Q 18 Does your course involve units of study in Science and /or Engineering?

The question was answered by the total sample. Of the respondents 86.4 percent said 'yes'. More males responded 'yes' (90.5 %) compared to females (80.9 %).The data was significant.

Q 19 Do you know what credit- transfer is?

The total sample responded to this question. The responses were divided between 'yes' and 'no', 57 to 53 responses. More females than males (59.6 % compared to 46 %) indicated 'yes' in response to this question. The data was significant.

Q 21 Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

There were 108 responses to this question. Of these responses only 43 (39.8 %) answered 'yes'. More females than males as a proportion of the sample (44.7 % compared to 36.1 %) indicated 'yes' for this question. Given the numbers of postgraduate students (30) and school students (24) such results are not unexpected. The data was significant.

Q27 Is this course recognised by a Professional Body or Society in your home country?

There were 108 responses in the sample to this question. Of these 53.7 percent responded 'yes'. A higher percent of males answered 'yes'

compared to females (67.2 % compared to 36.2 %). The data was significant.

Q 30 Will you remain in Australia for future educational studies?

This question related to possible future studies. Of the 108 respondents 58.3 percent said 'yes'. Of these more males than females responded in the affirmative (65.6 % compared to 48.9 %). The data was significant.

Q34 Did you have any career preparation advice or counselling in your home country before coming to Australia?

There were 103 responses to this question. Of these only 28 (27.2 %) said 'yes'. More males than females indicated that they had participated in career preparation / counselling (29.3 % compared to 24.4 %).

Q 37 Did your current institution provide you with career advice?

Of the 109 responses, 63 or 57.8 percent said 'yes'. Males compared to females were more likely to avail themselves of career advice at their current institution according to this sample (59.7 % compared to 55.3 %).

Further investigation occurred with additional cross tabulations being undertaken in relation to the specific questions outlined below.

4.3.2.8 *Cross tabulations using Question 5 Current Study (excluding the VET category)*

This cross tabulation attempted to view the data in terms of three sectors (secondary school, undergraduate, postgraduate) by excluding the VET individuals. This produced limited meaningful information on the data because of issues with the size of cell counts being less than five.

Q 1 Gender

There were 108 individuals in this sample. The gender distribution for this cross tabulation was 56.5 percent male and 43.5 percent female. More undergraduates and postgraduates were males (61.5 % and 56.3 % respectively) while the secondary school sector sample was composed of more females (54.2 %). The male dominance of the undergraduate and postgraduate sectors could be related to the selection of courses by students and the field of study being Science and Engineering. The data was significant.

Q19 Do you know what credit-transfer is?

Of the sample of 108, 52.8 percent responded yes. A higher proportion of undergraduates responded yes (65.4 %) compared to secondary schools (33.3 %) and postgraduates (46.9 %). The lower response rate from secondary schools students can be explained by their more recent introduction to the Australian education and training system or their lack of familiarity with this concept because of the level of education at which they were studying.

Q 21 Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

Of the sample, 106 individuals responded to this question. A higher proportion of the secondary school population answered 'yes' in comparison to undergraduates and postgraduates (47.8 %, 36.5 % and 38.7 % respectively). The data was significant.

Q 34 Did you have any career preparation advice or counselling in your home country before coming to Australia?

From the sample, 101 individuals answered this question. Of these only a minority of 27.7 percent responded 'yes'. A higher proportion of undergraduates responded yes compared to secondary school or

postgraduate students (32.0 %, compared to 18.2 % and 27.6 % respectively). The data was significant.

4.3.2.9 *Gender*

Q7 by Q1 Most recent course completed

This question related to educational background. Grade 10 and Grade 11/12 were combined together into the variable 'schools'. 'Foundation studies' and 'other' were combined into the variable 'Foundation Studies / Other'. The range of variables was reduced from six to four. The most recent course of study for males and females was from school (29.0 % and 36.2 % respectively). A higher proportion of males had recently completed a vocational qualification compared to females. This could be linked to the fields of study, especially Engineering. The data was measured as significant

Q14 by Q1 What was your result for this course?

This question related to the educational background of the student. Of the sample, 72 responded to this question. The 'excellent' and 'good' variables were combined to produce the variable 'Above Average'. 'Unsatisfactory', 'Needs Improving' and 'Satisfactory' were combined into the variable 'Average'. The scale was changed to that of a bivariate one. A higher proportion of males rated their results as above average compared to females (76.1 % compared to 73.1 %).

Q15 by Q1 What course are you currently doing?

The variables 'Vocational qualification', 'Grade 11/12' and 'other' were combined together to produce a new variable 'Other'. The range of variables was reduced from five to three. A higher proportion of postgraduates are female compared to males in the sample (27.7 % compared to 23.8 % respectively). The data was measured as significant.

Q24 by Q1 In general, how would you rate your satisfaction with your current institution?

The variables 'needs improving' and 'unsatisfactory' were combined to form the variable 'unsatisfactory'. The range of variables was reduced from five to four. Females in the sample rated their satisfaction with their institution more highly than males (14.9 % excellent, 40.4 % good and 34.0 % satisfactory for females, compared to 11.3 %, 37.1 % and 24.2 % for males). The data was measured as significant.

Q26 by Q1 What do you think your final result for this course will be?

The variables 'needs improving' and 'unsatisfactory' were combined into the new variable 'unsatisfactory'. The range of variables was reduced from five to four. Males were more likely to rate anticipated final results as 'good' (56.5 %) while females were more likely to rate them as 'satisfactory' (44.7 %). The data was measured as significant.

4.3.2.10 *Additional Cross Tabulations*

A number of more specific question by question cross tabulations were conducted.

INSTIT 2 – School and Non school

Q 11a What has been your greatest concern in changing from your home country to study in Australia?

There were five variables offered to respondents for this question. A change was made to the variables. English language remained and all other categories were aggregated into the variable 'other'. This produced a bivariate table. Of the 14 respondents 50 percent identified English language was a concern. The number of responses made an observation unreliable.

Q14 What was your result for this course?

From the sample there were 72 respondents to this question. The variables 'excellent' and 'good' were combined into the variable 'above average'. 'Unsatisfactory', 'needs improving' and 'satisfactory' were combined into the variable 'average'. The scale was changed to that of a bivariate one. As a result of the aggregation, 75 percent of respondents rated the result for their previous course as above average. For the school group 100 percent of the sample stated that their result was above average. For the non school sample the result was 71.9 percent.

INSTIT 3 – Universities without the University of Canberra

Q6 How would you rate your current level of English?

There were 82 responses in this sample. The variables 'advanced' and 'good' were combined into the variable 'good'. 'Intermediate' and 'needs improving' were combined into the variable 'average'. The scale was changed to that of a bivariate one. Of this sample just over half (51.2 %) rated their level of English as good. The level of English was rated 'good' by the sample at Curtin and Monash (51.7 % and 63.6 % respectively) but a higher percentage at Tasmania rated their level of English as average (58.1 %). The data was measured as significant.

Q15 What course are you currently doing?

There were 79 responses in this sample. The 'Other' category was removed to produce a bivariate spread of variables, postgraduate and undergraduate. A higher proportion of the sample was undergraduates at Tasmania compared to Curtin and Monash (43.4 % compared to 32.1 % and 24.5 % respectively). The data was measured as significant.

Q23 How would you rate the quality of the teaching with your current course?

There were 82 respondents. 'Excellent' and 'good' were combined into the variable 'good'. 'Satisfactory', 'needs improving' and 'unsatisfactory' were combined into the variable 'average'. The scale was changed to be bivariate. Of the responses, 58.5 percent rated the quality of teaching as average with the sample ranking Curtin, Tasmania and Monash as 'good' in that order (51.7 %, 38.7 % and 31.8 %). The data was measured as significant.

Q24 In general, how would you rate your satisfaction with your current institution?

There were 82 respondents. 'Excellent' and 'good' were combined into the variable 'good'. 'Satisfactory', 'needs improving' and 'unsatisfactory' were combined into the variable 'average'. This produced a bivariate table. A majority of the respondents answered average (54.9 %). The satisfaction with the institution was rated highest at Curtin with 55.2 percent of the sample rating it as 'good'. A higher percentage at Monash rated it as 'average' (63.6 %). The data was measured as significant.

4.3.2.11 Issues raised within questionnaire

For this section a number of issues are identified and warrant observations and comments. These are discussed under the relevant section headings of the questionnaire with additional information from the interview sample included, supported by relevant comments from the literature.

Section A: Background – Questions 1 – 6

For this section the background questions and data gathered (gender, age, nationalities, distribution across Australia of international fee-paying

students, sector and fields of studies) are compared to that of relevant wider populations.

Issue 1: The gender distribution of both the questionnaire sample and interview sample compared to total international student population, and total Science and /or Engineering higher education populations.

There has been a significant male dominance of some post-secondary courses. Traditionally this has applied to Science, Information Technology, Mathematics and Engineering. This trend was reversed in Science in the 1990s. Dobson (2003) considered the enrolment pattern of both domestic and international students during the period 1989 – 2002. In 2002, of the Information Technology students in the total higher education population, only 24 percent were female; in Physical Sciences 34.5 percent and in Mathematics 36.7 percent. Females dominated the Life Sciences with 56.1 percent of the population. Overall in Science and IT the female proportion of the total population was 39.3 percent. The gender imbalance applies especially to Engineering. For the total higher education population it was estimated that “only 18 percent of students studying engineering at university are females” Otmar (2001, p. 48).

For the higher education student enrolment (commencing in 2003), of the 361,555 total, 46 percent were males and 54 percent females. The gender distribution across broad fields of study from the same data was for Natural and Physical Sciences males 46 percent and females 54 percent, and IT males 77 percent and females 23 percent. The Engineering and Related Technologies field of study gender balance was males 85 percent and females 15 percent, while for the students enrolled in non award courses it was males 44 percent and females 56 percent. It appears that the total population gender imbalance had worsened since the observations by Otmar (2001). Efforts have been made in Australia to redress the gender balances in traditional and non traditional occupational roles. In the Science field of study, equity targets have been set at 40

percent. An occasional paper from the (Australian Council of Deans of Science, 1999) discusses how enrolments are falling far short of this target. Further discussion on this issue will occur later in Chapter 5.

Table 4.3-7 The Gender of Selected Populations

Populations	Male %	Female %
Higher Education 2003	45.6	54.4
Vocational Education and Training 2004	49	51
Schools 2002	50.9	49.1
International Fee Paying Students 2003	52.3	47.7
Questionnaire Sample	57.3	42.7
Interview Sample	63	37

Source: (National Centre for Vocational Education Research, 2004), (Australian Vice Chancellors' Committee, 2005b), (Australian Bureau of Statistics, 2004b), (Warren, 2005)

Table 4.3-7 highlights the gender balances for a number of populations. For total higher education population in Australia in 2003 there were more female students (females 54.4 % and males 45.6 %). For the Vocational Educational and Training population in 2004 the gender balance was slightly more balanced (females 51 % and males 49 %) whilst for schools in 2002 it was 50.9 percent males and 49.1 percent females. For the total international fee-paying student enrolment in 2003 47.7 percent were female and 52.3 percent males. For the questionnaire sample the gender balance was males 57.3 percent and females 42.7 percent. For the interview sample the gender balance was males 63 percent and females 37 percent.

Table 4.3-8 Percent Gender Breakdown of International Fee-Paying Enrolments in Higher Education and VET by Field of Study 2003

Broad Field of Study	Higher Education		VET	
	Males %	Females %	Males %	Females %
Engineering and Related Technologies	82.8	17.2	87.5	12.5
Information Technology	77.4	22.6	71.5	28.5
Life Sciences	47.8	52.2	38.9	61.1
Mathematics	63.2	36.8	42.9	57.1
Physical Sciences	56.0	44.0	54.5	45.5
Sciences	53.1	46.9	76.2	23.8
Total	54.4	45.6	53.6	46.4

Source: (Warren, 2005)

Table 4.3-8 consists of unpublished data from the AEI student database. A slightly higher percent of the international higher education enrolment is male compared to the VET enrolments. This data highlights for the broad fields of study enrolments in 2003 higher education and VET for international fee-paying enrolments in Engineering, Information Technology, Mathematics, Physical Sciences and Sciences that the enrolment is biased towards males. For Life Sciences the enrolment is favoured towards females. Given the size of the international fee-paying enrolment and its bias towards males it is less likely the equity targets of the Australian Council of Deans of Science will be reached.

Issue 2: The age distribution of the questionnaire and interview samples compared to wider populations.

Table 4.3-9 Age Distribution by Percent

Populations	<19 Years	20-24 Years	>24 Years
Higher Education 2003	22.6	35.5	41.9
International Fee - Paying Students 2003	18.8	48.3	32.9
Questionnaire Sample	10.9	58.2	30.9
Interview Sample	4.5	59.1	36.4

Source: (Australian Vice Chancellors' Committee, 2005b), (Warren, 2005)

A significant proportion of the higher education population in Australia is over 24 years (Table 4.3-9). In 2003 there were 41.9 percent aged over 24 years while those students less than 19 years were 22.6 percent and 20-24 years 35.5 percent of the total higher education population. The distribution was different for the higher education population commencing in 2003 where those students less than 19 years were 31.9 percent, 20-24 years was 27.4 percent and 25 and over was 40.7 percent. The age distribution for the VET population is on average older. In 2004 the VET data relating to age was for the 15-24 year group 42 percent, 25-44 years 40 percent and 45 year or more 18 percent. For the 2003 international fee-paying student enrolment those aged less than 19 years were 18.8 percent, 20-24 years were 48.3 percent and over 24 years 32.9 percent. For the questionnaire sample 10.9 percent was less than 19 years of age, it was 58.2 percent for the 20 – 24 years and 30.9 percent for students 24 years or older. The figures for the interview sample were similar although the 19 years or less was lower, with only 4.5 percent.

Issue 3: The major source countries for international fee-paying students in Australia compared to the questionnaire and interview samples.

For the questionnaire sample there were 23 countries represented and for the interview sample there were 11 countries present. The dominant countries in the questionnaire sample were from Malaysia and the PRC while in the interview sample Malaysians were predominant.

Table 4.3-10 Top 10 Source Countries for International Students in Australia 2003

Country	Number 2003	% 2003	Questionnaire Sample %	Interview Sample %
People's Republic of China	57,579	18.9	22.7	4.5
Hong Kong SAR	23,803	7.8	7.3	13.6
South Korea	22,159	7.3	0	0
Indonesia	20,336	6.7	10	0
Malaysia	19,779	6.5	20	45.5
Japan	18,987	6.3	1.8	0
Thailand	17,025	5.6	8.2	0
India	14,386	4.7	4.5	0
United States of America	12,189	4.0	0.9	4.5
Singapore	11,843	3.9	9.1	0
Others	85,238	28.1	15.5	31.8
	303,324			

Source: (Australian Vice Chancellors' Committee, 2005b)

The largest country source for international students (Table 4.3-10), the PRC, was also identified as the largest source country for the questionnaire sample. Malaysia had a higher representation in the questionnaire sample 20 percent compared to 6.5 percent in the total international student population. Of the top 10 countries significant as a source for international fee-paying students the only country not represented in the questionnaire sample was South Korea. The omission of any South Korean students is by accident rather than by design given that the sampling approach used was reliant on students responding to an invitation to complete the questionnaire. In the interview sample the proportion of students from Malaysia is considerably larger than for the total international fee-paying student population. The range of countries

that the students were drawn from (23 for the questionnaire sample and 11 for the interview sample) was felt to be a reasonable distribution that could provide a diversity of observations from a cross-cultural perspective.

Issue 4: The pattern of international fee-paying student enrolments across Australia as the questionnaire sample had a considerably higher percent of respondents from Tasmania compared to the national data.

Table 4.3-11 International Student Enrolment Distributions by State/Territory

State/Territory	Numbers 2003	% 2003	Questionnaire Sample %	Interview Sample%
New South Wales	117,748	38.82		
Victoria	83,714	27.60	20.0	27.3
Queensland	49,142	16.20		
Western Australia	29,812	9.83	26.4	9.1
South Australia	13,467	4.44	21.8	4.5
Australian Capital Territory	6,022	1.99	1.8	
Tasmania	2,934	0.97	30.0	59.1
Northern Territory	485	0.16		
Total	303,324			

Source: (Australian Education International, 2004c)

The major populations of international fee-paying students (Table 4.3-11) are located in New South Wales, Victoria and Queensland. No institutions from New South Wales and Queensland participated in distributing the questionnaire. The proportion of the questionnaire respondents living in Tasmania, South Australia and Western Australia was considerably higher than the proportion of the distribution of the enrolment of international fee-paying students living in these states. In the case of Tasmania, the variance was greatest between the total

international fee-paying student enrolment distribution and the questionnaire sample distribution (0.97 % compared to 30 %).

Issue 5: The sector data for the total number of international fee-paying students and the potential variance of the samples.

Table 4.3-12 Broad Level of Course - Higher Education 2003

Broad Level	Higher Education Population %	International Students studying at Higher Education %	Questionnaire Sample %	Interview Sample %
Postgraduate	26.7	36.7	36.6	30
Undergraduates	70.1	58.1	63.4	70
Non Award Courses	3.3	5.4		

Source: (Australian Vice Chancellors' Committee, 2005b) and (Australian Vice Chancellors' Committee, 2005a)

Whilst the questionnaire sample did not include any non award course students currently studying these courses, the proportion of postgraduate to undergraduate students was indicative of the international fee-paying student population (Table 4.3-12). When planning was undertaken for the distribution of questionnaires in 2000 the published figures available at the time had the proportional split as 30:70 postgraduates to undergraduates. This balance was achieved for the interview sample. Of the students participating in the questionnaire sample, 13 had previously completed the major type of non award course (Foundation Studies) whilst a number of others had attended Study skills or other types of Orientation programs and/or enabling courses (some as part of twinning programs).

Tables 4.3-8, 4.3-13, 4.3-14 and 4.3-15 consider international fee-paying student enrolment from a number of different perspectives. Each table has data relating to the broad fields of study. Table 4.3-8 considers higher

education and VET international student enrolments by the fields of study and gender. Table 4.3-13 considers broad fields of study comparing the total higher education enrolment with international students studying both onshore and offshore. Table 4.3-14 considers the international students commencing their course in the higher education sector in the year 2003. Table 4.3-15 considers the total international student enrolment in the higher education sector by broad fields of study.

Consistently through these tables (Tables 4.3-8 and 4.3-14) the data shows a significant gender bias towards males for Engineering, IT and Physical Sciences. Table 4.3-13 shows the proportion of the international student enrolment studying Information Technology as being much greater than that for the total population (15.2 % compared to 8.3 %). The proportions for Engineering and Natural and Physical Sciences appear to be similar (8 % for international enrolments compared with 7 % for the total higher education sector and 7 % for international enrolments compared to 7.6 % for higher education for the respective fields of study). The proportion of international enrolments studying Natural and Physical Science appears to be higher for offshore programs compared to onshore programs. Table 4.3-15 again highlights the importance of international enrolments in the IT field of study in comparison with Engineering, and the Natural and Physical Sciences.

Table 4.3-13 Broad Field of Study - Higher Education Compared to International Student Populations 2003

Broad Field of Study	Higher Education Population %	International Students studying at Higher Education %	International Students studying at Higher Education %
		Offshore	Onshore
Engineering	7.0	1.6	6.4
Information Technology	8.3	3.2	12.0
Natural and Physical Sciences	7.6	3.8	3.2

Source: (Australian Vice Chancellors' Committee, 2005a)

There appears to be an anomaly between data published by the AVCC and IDP on their respective websites. IDP for 2003 states the breakdown for international students and the field of study as; Engineering 12 percent, Information Technology 23 percent, Natural and Physical Science four percent compared to the AVCC Engineering eight percent, Information Technology 15.2 percent and Natural and Physical Sciences seven percent (Table 4.3-13). The possible confusion between the two sets of data may have occurred because one set of data may refer to enrolments as opposed to students. The enrolment figure is nearly always the greater of the two sets of data. The data may also be confused because of the inclusion of offshore with onshore enrolments. The AEI enrolment data for the broad fields of study in 2003 is for Engineering 8.9 percent, IT 17.6 percent and Physical Sciences 1.7 percent. See Appendix 8 for an explanation of enrolment and data collection.

Table 4.3-14 Commencing Overseas Students in Higher Education by Field of Study and Gender 2003

	Males	Females	Total
Natural and Physical Sciences	1,683	1,907	3,590
Information Technology	10,751	3,255	14,006
Engineering and Related Technologies	6,547	1,236	7,783
Non Award	4,635	5,923	10,558
Total	52,940	47,856	100,796

Source: (S. a. T. Department of Education, 2005)

Of the questionnaire sample of 110, for 35 cases the field of study was unclear (many of these were probably school sector individuals). For the remaining 75 cases, 48 percent were identified as studying Engineering, 24 percent Science and 28 percent IT/Computing. The lack of clarity arose because this assessment was based on the response to question 17 (the name of the qualification hoped to be achieved as a consequence of studying the current course). For the interview sample, again excluding the one school case, 52 percent of the remaining 23 cases were studying Engineering, 29 percent Science and 19 percent IT / Computing.

Table 4.3-15 Total of All Overseas Students in Higher Education by Field of Study 2003

Broad Field of Study	Numbers	Percent
Natural and Physical Sciences	8,008	3.8
Information Technology	32,746	15.6
Engineering and Related Technologies	16,860	8.0
Non Award	11,294	5.4
Total	210,397	

Source: (S. a. T. Department of Education, 2005)

Section B: Educational Background – Questions 7 – 14

Issue 6 The role of Foundation Studies Students in the sample.

Whilst no Foundation Studies students were surveyed in the questionnaire sample, 13 higher education students had formerly studied these courses. These responses represent 11 percent of the questionnaire sample. In response to the question about the previous course studied, the groups in order of significance were: school (33 %), undergraduate (29 %) and VET (20 %).

Foundation Studies programs are offered by most Australian universities. They are sometimes described as *Fast Track* programs. These programs provide a bridge between the international students' offshore high school experience and enrolling into an undergraduate program. The curriculum content is usually composed of some English language (often customised to include English for specific purposes which include the vocabulary relating to the intended undergraduate studies) and some studies relating to the future undergraduate program. Such programs usually afford the student a direct entry into the undergraduate program. In essence the students gain an insight into their undergraduate program before they formally commence these studies.

In the enrolment statistics that are collected by universities Foundation Studies numbers are usually incorporated in the category 'non award courses'. As illustrated in Table 4.3-15 these enrolments accounted for 5.4 percent of the international fee-paying numbers in higher education in 2003. For the students commencing higher education in 2003 (Table 4.3-14) these enrolments appeared even more pronounced representing 10.5 percent of all overseas commencements for that year in the higher education sector.

Issue 7: The importance of offshore activity and twinning programs to international education.

Of the questionnaire sample 10 percent had studied an Australian qualification offshore. Three of the interview sample had participated in twinning programs. Currently 25 percent of the overseas higher education enrolment is studying offshore. It was anticipated that the questionnaire and interview samples would include international students who had gained part of an Australian qualification offshore. It was also expected that such students' enrolments might be as a consequence of a twinning arrangement between an offshore institution and an Australian institution.

Twinning arrangements give international students the opportunity to commence an Australian qualification in their home country with the associate support structures of living in their home country before making the transition to Australia to study. One of the other advantages is that whilst studying in their home country the student pays a course fee which is considerably lower than in Australia. For many also their living costs would also be less than if they were studying in Australia. The development of offshore programs has become in recent times more significant to Australian institutions. They are in part assisting the continued growth of international fee-paying student enrolments to Australia as well as assisting building an education capacity in the students' home country.

Issue 8: English language is a major concern.

Of the ten responses that express concern about the transition from offshore to onshore programs English language stood out as the major concern. For many Asian international fee-paying students especially, there is a distinction between studying English in their home country (which can tend to be grammatically based) and not having had sufficient conversation practise. In addition to this, there can be issues associated with accents, especially having been taught by a teacher with a non

Australian accent and then having to make the transition on arrival to Australia to adjust to both vernacular and academic speech.

Issue 9: Background to previous studies.

Of the 61 respondents to the question (13a) what qualification did you obtain in your previous course, 22 percent had previously studied a Bachelor of Science and 21 percent had previously studied a Bachelor of Engineering. A further 22 percent had studied a preparatory course either Grade 11/12 or a Foundation Study course. The fact that the response was not 100 percent might also be linked to the response later in the questionnaire that 68 percent of the international fee-paying students had not had career advice or preparation in their home country before coming to Australia (question 34). Students have and do change their mind about potential courses of study. The response to this question is indicative of this, and that some students have been attracted to the fields of study of Science and Engineering that might not have previously considered nor had a background in these fields.

Issue10: The institutional settings of where the questionnaire sample had previously studied.

The international fee-paying students completing the questionnaire had diverse backgrounds with respect to the 48 institutions where they formerly studied. From the perspective of being able to comment on, not only courses, but a variety of program and delivery structures and modes of delivery, the questionnaire sample provided the potential for being able to comment on a diverse array of institutions both onshore and offshore. The comments on institutions offshore provided the possibility of either benching-marking or providing contrasts to student views gained from institutions in Australia.

Section C: Current Educational Studies – Questions 15 – 29

Issue 11: Lack of knowledge about the Australian education and training system.

Just over half of the questionnaire sample (question 16) commenced their course in the year the survey was conducted (2003). There could be implications here for their lack of knowledge about the Australian education and training system. In the higher education sector in 2003 there were 100,796 overseas enrolments that had commenced their course; this represents 33 percent of the total international fee-paying student enrolment for Australia. The proportion of students commencing their course in the questionnaire sample is higher than that for the total international student population. Given the spread of the sample across the school, undergraduate and postgraduate sectors of the population, there does not appear to be any adverse effects of over half the questionnaire sample having commenced their course in 2003. As 37 percent of the higher education sector component of the questionnaire sample was postgraduates, it does not necessarily follow that just over half the sample arrived in Australia in 2003. There is no evidence from the remainder of the questionnaire responses or the subsequent interviews that this is an issue of concern.

Issue 12: Balance of studies in the interview sample.

Among the interview sample, the majority were working towards a qualification in Engineering (ten), with five each in Science and Computing. In the questionnaire, questions 9b (previous course- twinning programs), 13a (previous qualification) and 18 (current course) were framed to track past and current intentions to undertake a course of relevant to this study. The questions served to both ascertain the validity of the questionnaire sample that the students were in fact undertaking a course of study in Science and/or Engineering as well as attempting to chart any change in the students' intended course of study over time.

Of the interview sample it is interesting to note that a clear intention to study Science and Engineering is obvious from 91 percent of the sample. Of the remaining two cases, one was studying at school and the other a postgraduate doctoral student the field of study was not clear from the data gathered. The proportion of the interview sample studying engineering however, is greater than that evident in the international student population as a whole. As illustrated above in Tables 4.3-14 and 4.3-15 the order of enrolment importance of the total population of international fee-paying students is IT, followed by Engineering, and Physical and Natural Sciences compared with the order of the interview sample of Engineering, with Science and IT ranking equal second in significance. The order of significance for the questionnaire sample also favoured Engineering followed by Science ahead of the IT field of study.

Issue 13: The appropriateness of the sample studying in the field of study of Science and /or Engineering

There were a number of questionnaire responses which indicated that students were not studying in the target subject fields of Science and/ or Engineering. Of the 'No' responses to question 18 in the questionnaire, of the 15 cases, 9 were studying in the school sector. Consultations had occurred with the school sector contact teachers at the relevant institutions about targeting students appropriate to the study. The remainder of six cases were studying at Monash where the questionnaire was distributed electronically again to the target audience for the study. It is possible in both situations that the definition of the Science field of study caused students to answer in the negative when they should have given a 'yes' response.

Issue14: The sources of information or knowledge about credit-transfer in the questionnaire (question 20) were from 'Course Advisor' with 34 percent of responses, 'agent' 19 percent, 'Australian institution' 14 percent and 'teacher' 14 percent.

Responses suggesting agents are more likely to refer to an offshore context. An *agent* is usually someone responsible for recruiting an international fee-paying student. Course advisor could refer to both an onshore or offshore situation. The term *course advisor* is more likely to be associated with the higher education sector. Teacher also could be both referred to in both an onshore and offshore sense.

Issue 15: Lack of knowledge of the term 'credit-transfer'.

For the question in the questionnaire on credit-transfer there were only 63 responses from a possible 110 respondents. Even though there were 63 responses on the source of knowledge of credit-transfer (question 20) only 57 had answered the previous question (question 19) and indicated that they understood what the term credit-transfer meant. The nature of responses appears to relate to the level of education that students have reached. There was a much higher affirmative response rate from undergraduates compared to school students. This may also be as a consequence that some of these students had already progressed from school, Foundation Studies and/or VET in Australia and had experienced the principles of credit-transfer first hand themselves. Responses were also higher from females than males.

Issue 16: The usefulness of introductory programs.

The questionnaire question relating to introductory programs (question 21) elicited 52 responses on the usefulness of such programs despite only 43 respondents saying they attended such programs. These programs tend to be a feature mainly of the higher education sector. Just on 39 percent of the questionnaire sample participated in such programs while 47 percent made a comment. The discrepancy appears to have occurred as a consequence of students misreading the question. On the questionnaire, responses only needed to be given for question 22 on the usefulness of introductory programs if the answer to question 21 had been in the affirmative. Responses varied by gender, education level and institution. More males responded that they had participated in such programs, and

an affirmative response was much higher amongst the non school grouping of institutions, supporting the idea that this question related to the level of education being studied. Amongst institutions, students at Curtin were more likely to participate in such programs.

Issue 17: Feedback on teaching quality and institution satisfaction

The quality of teaching in the current courses was rated at 74 percent satisfied (or better) whilst student satisfaction with the Institution was rated at 81 percent satisfied (or better). There are two comments that can be made in response to these results from the questionnaire (questions 23 and 24). Firstly the measurement of student satisfaction with their course and institutions relates to other longitudinal data collected by Australian Education International, and secondly, as consumers, students were satisfied with what they received.

Gregg Smith et al in research published as (Smith G. et al., 2000) and (Smith G, 2001) have discussed student satisfaction as being an important factor in whether they would recommend studying in Australia to students in their home country. Their findings were based on two surveys conducted in 1999 and 2000. Smith G (2001) found that “almost 75 percent of students indicated that the reputation of the course was either very important or quite important in their decision to study at the institution” (p. 7). The issue of student satisfaction in relation to institutions will be taken up later in Chapter 5.

It is the issue that students were dissatisfied in some respects which is of greater interest to the present study. Some of the issues highlighted later in the questionnaire (question 39) were not necessarily points that related directly to the students’ course or institution, but some students appear to have been unable to distinguish between concerns they had with the wider Australian education and training system in responding to their satisfaction with their course or institution. Interestingly the sample from Glenunga International High School rated their institution as having the

highest quality of teaching. One could assume that this group of students may also have been some of the more recent arrivals among the total questionnaire sample. There was a gender variation, with females rating their institution more highly than males. These results will be discussed later in Chapter 5 in conjunction with input from the relevant institutions.

Issue18: Ranking of course variables.

For all institutions except Monash University the first ranked variables (in order of significance) were teachers/lecturers, relevance of course material, facilities, and student advisors/student support. For Monash, respondents teachers/lecturers rated as the most important aspect of the course followed by facilities and the relevance of course materials.

The questionnaire included a range of different variables in relation to the question on course satisfaction in order to ascertain what was seen as the most important feature by the international fee-paying student. The variables given as options in the question were teachers/lectures, facilities, student advisors/support services, relevance of course material and additional assistance provided in English. An opportunity was given to include another choice if none of the variables given were seen as the most important to the student. The human factor of teachers/lectures was identified as the most important factor by the questionnaire sample.

Issue 19: Expectations of the current course.

From the questionnaire sample the school sector rated 65 percent and higher education sector 51 percent as expecting results that were 'good' or 'excellent'. The variation may have been related to the fact that the school sector students were more recent arrivals to Australian education and training. As discussed earlier, there was a distinct variation in terms of gender with regard to anticipated results.

Issue 20: Researching the recognition of the course by the relevant professional body in students' home country.

The results from the questionnaire (question 27) showed a distinct difference across sectors with only 21 percent of schools students researching the recognition of the current course compared to 61 percent of higher education students. These results would appear to relate to both the level and type of courses being studied. As secondary studies are not a pre-requisite to gaining a professional qualification, the school students might have perceived that undertaking this research was not as important compared to the higher education students undertaking this task. There were variations by both gender and institutions. The highest response rate was from the University of Tasmania sample which had a higher proportion of Engineering students. Overall, more males as a proportion answered 'yes' compared to females. Courses such as Engineering would require students to investigate the professional recognition whilst this might not necessarily be required for courses such as Life Sciences where career relationship was more diverse.

Issue 21: Student participation in extra-curricula activities.

The results from the questionnaire sample in relation to student participation in extra-curricula activities (question 29) showed that a range of activities were undertaken by international fee-paying students. The activities taken in order of significance were: societies/clubs 49.2 percent; work experience 31.7 percent; competitions 20.6 percent; and conferences 20.6 percent. There were variations across institutions but these in part could have related to the differing course enrolments among the questionnaire sample.

Section D: Future Educational Studies – Questions 30 –33.

Issue 22: Of the questionnaire sample, 57 percent anticipated remaining in Australia to pursue future studies (question 30) including 100 percent of the schools students.

More males than females from the questionnaire sample intended to remain in Australia for further study. There were both sectoral and institutional variations. The school sector and institutions such as the University of Tasmania with its higher undergraduate population had a higher proportion of the sample that was staying to complete formal studies compared to other institutions.

Issue 23: Future study plans.

The respondents to the questionnaire (question 32) indicated their future study plans as being postgraduate studies 36.4 percent and undergraduate studies 16.4 percent. This reflects the movement of students through the levels of education from undergraduate to postgraduate and from school to undergraduate level.

Issue 24: Qualification being pursued.

For those continuing (answering ‘yes’ to question 33 in the questionnaire) the main qualifications being pursued were postgraduate (11), MBA (6), Masters (5), and PhD (5). An increasing proportion of international fee-paying students have been undertaking Masters Courses in recent years to gain additional points in the general skill test for migration purposes. This issue will be discussed later in Chapter 5.

Section E: Career – Questions 34 – 39

Issue 25: Career preparation before arriving in Australia.

Of the questionnaire sample 68.2 percent of respondents stated that they did not have career preparation or counselling in their home country

before coming to Australia whilst 25.5 percent did (6.4 percent did not specify an answer).

There were distinctions between gender, sector and institutions in relation to this issue. More males than females claimed to have had career advice before arriving in Australia. Undergraduates were more likely to have received such advice compared to postgraduates and secondary students. A higher proportion of the non school group of institution students was more likely compared to the school group of students to have received such advice. The proportion of the questionnaire sample answering 'no' to question 34 is surprisingly high. The reasons for this might have related to cultural views on career education. This will be discussed in more detail later, in Chapter 5.

Issue 26: Intended careers identified by students.

The questionnaire sample identified 44 types of intended careers from the 95 respondents who answered question 35. These careers related mainly to the three fields of Engineering 28 percent, Science 18 percent and Computing 16 percent. For the interview sample the intended careers given in order of significance were engineers (12), science (4), business (3) and computing (2). Engineers as the intended career represented 54 percent of the interview sample. This representation was higher than had been anticipated and also was larger in comparison to the total international fee-paying student population.

Issue 27: The association between career intention and current course being undertaken.

Of the questionnaire sample 5.5 percent did not see that their current course matched their career intention (question 36). Conversely 16.8 percent rated their career and course match as 'very well', 37.3 percent 'fairly well' and 38.2 percent as 'reasonably well'.

Because I was examining a sample of international fee-paying students, there may well have been a distinction made between gaining a professional qualification as opposed to the proposed career to be pursued after the students' Australian studies. Given the economic circumstances of the students and their family ties it may be that some students were intending to pursue some form of business endeavour independent of their academic and professional qualifications. This issue will be addressed below in conjunction with comments from the interviews with students.

Issue 28: Students' call on career advice.

Of the questionnaire sample the majority (58 %) had accessed the career information available at their current institution (question 37). The school group of institutions compared to the non school group had marginally higher access to career advice. Of the higher education institutions the students from the University of Tasmania were proportionally more likely to have accessed careers advice. Of the higher education institutions the Tasmanian sample consisted of a higher proportion of undergraduates. More males than females were proportionally more likely to have accessed career advice in their Australian institution.

Issue 29: Effectiveness of career advice in the current institution.

Of the questionnaire sample (question 38) accessing career advice, 21 percent of the respondents identified careers advice in their current institution as needing improvement or was unsatisfactory. This may be a provision issue or it could be a cultural viewpoint on the perceived model of career advice. This will be discussed later.

Issue 30: Other matters raised about Australian education and training.

The main additional comments made in relation to Australian education and training were that the course fees were too expensive (13 % of

respondents answers) and the need to adjust teaching and materials to the needs of international fee-paying students (10 %).

4.3.2.12 *Overview Comments in relation to the interviews.*

From the interviews with international fee-paying students a number of themes appear to warrant comment: the type of career advice received by students when at high school; the motivation for travelling overseas for an educational experience; the use of undertaking studies in Australia to gain a professional qualification before engaging in some form of business endeavour; an interest by some students to gain permanent residence in Australia; and the transition between levels or types of educational experiences.

The interview sample included 15 students whose most recently completed course was from overseas and seven who had completed a course in Australia. The sample members' English ratings were; advanced (6), good (9), intermediate (5), and needs improving (2). The previous courses were school (4), VET (4), undergraduate (9) and Foundation Studies / other (5). The sample members' satisfaction with their institution ranged from 'good and above' (9) to 'satisfactory and below' (13). On the ratings for quality of teaching in their current course the sample members were evenly divided in their ratings between fifty percent 'good' and fifty percent 'average'.

The career background and service provision (questions 1 and 2 of the focus questions) that students had been exposed to at high school, varied considerably from little or no provision to more extensive programs as evident from the following extracts from the interview transcripts (Cases 5 and 12). In answer to the question (question 1) 'did you receive careers advice at high school' 72.7 percent said 'yes' and 27.3 percent of the interview sample said 'no'. For those that did receive careers advice the responses on the level and quality of advice (question 2) can be summarised as course counselling (31.3 %), information about further

study and /or institutions (18.7 %), study abroad (18.7 %) and two responses (12.5 %) for each of information about jobs, consideration of personal strengths and weaknesses, and one response for visits from employers.

“... we had to find [out] by ourselves.” **Case 5**

Other students undertook career education programs similar to those conducted in high schools in Australia. Student Case 12 acknowledged that her exposure to careers commenced in junior high school classes (at a time of significant course selections): it involved elements of course counselling, and pathway planning where subjects were linked to possible occupations. In response to whether she had received careers advice at high school she commented:

Interviewee: “...I think before, like...it’s around year 8 in Hong Kong...

Greg: [Yes] ...

Interviewee: ... I mean Year 8 in Australia...in Hong Kong they will have like...a change of subjects?

Greg: [Yes]

Interviewee: Which is...for the exam of Hong Kong Certificate Exam, which is like the VCE in Australia. So at that time, I had kind of like career advice of choosing options ... or the university you go in ... that sort of advice.

Greg: Okay, so it was more course counselling.

Interviewee: [Yes], I think so.

Greg: Can you remember the time whether when they talked to you about subjects, did they also mention possible careers, or occupations?

Interviewee: [Yes], they do. ...if you do like...Science or Chemistry maybe you could be a chemist or you know you could do Pharmacy you could be a pharmacist back home.”

Case 12

From some students, especially those from Malaysia, there is a close link between careers, course preparation and being given advice to study overseas from an early age. There also appears to be a link between careers advice and acquiring English language proficiency in an English speaking country (Case 7). Although this was not confined to just Malaysian students, a Hong Kong student (Case 12) also said something similar; she also indicated that she had been thinking of studying overseas for some time.

Interviewee: “Most of them said you can either study locally or go abroad. Your career prospect, if you study abroad and learn English are advanced.

Greg: Okay. So they sort of almost encouraging you to go abroad.

Interviewee: [Yes].

Greg: Okay. ...

Greg: That advice was it at the very end of your schooling in Malaysia or can you remember that you got that sort of information in several years of schooling?

Interviewee: ...you can say even from primary school time you kids are probably going to go overseas studying by secondary school. There will be emphasising something like that. If you have a chance to go overseas study they encouraging us to study abroad.” **Case 7**

Interviewee: “...actually...I think of studying overseas even when I was in high school, so...I first started thinking of going

to...UK, but later on I came to Australia because it is a cheaper choice..." **Case 12**

For one Malaysian student (Case 10) career preparation in part was attending an education fair with overseas institutions in attendance.

Interviewee: "... it is actually like an education fair.

Greg: Right.

Interviewee: And it is organised by our school where representatives from each institute and even overseas institutes. They just come over here and talk about interested students, introduce courses, conditions and stuff like that." **Case 10**

One student (Case 9) questioned the motivating factors for students going overseas to study and how this might relate to being unsuccessful in future studies.

Well you see students over in Malaysia particularly those wanted to go for overseas studies are rich enough. Families want their children to strive for their future that might contradict with their interest somehow. They can afford to study anything they want. Also, they want good education that promises a better career and future. In certain period normally these days, they would choose Business and Engineering. Hence, everybody go for Engineering. Private colleges earn the benefits. Some have to yield more that they came out with attractive course prices and many more combinations! This has become a trend...no joke! Talented and non-interest student go for the courses regardless of what their interest is as long as they have the money. Eventually this end up in lots of crisis such as subjects / units failures here and there. Parents and students complain and the educational unit then have to come out with promising marking and awarding structures that make all people happy. **Case 9**

For Cases 2 and 22 there was a strong sibling link studying their current course and the courses that other family members had previously

undertaken, whilst for Case 7 there appears to have been a pattern of studying overseas established by siblings.

Greg: “... perhaps when did you think you might want to go into Engineering, was that a decision you made in school, or was that a decision you made after you worked out which university you wanted to go to?

Interviewee: ...before when I am in high school.

Greg: When you were in high school.

Interviewee: Because family members ...like...having my cousins are engineers and my brothers study...

Greg: Oh, okay, so your brothers studied Engineering and your cousins studied Engineering.

Interviewee: [Yes].” **Case 2**

Interviewee: “... because all my brothers taking Engineering courses so I have interest to take Engineering degree.

Greg: Okay. So you are following your brothers’ footsteps with doing Engineering.

Interviewee: [Yes].” **Case 22**

Interviewee: “... my parents always expect me to go overseas I had three elder sisters who all studied abroad.

Greg: Okay. They expected you going overseas.” **Case 7**

It appeared that some students were studying to gain a professional qualification before embarking on a business endeavour (Cases 5, 8, 10 and 16). One student (Case 16) described his intended career as “an entrepreneur”. For another student (Case 8) he had already established a company involved in ecotourism while he was currently engaged in his studies.

Interviewee: “Even I study Engineering, I want to find a job in Engineering or related to Engineering for the first few years, after that I will move into business field and do some ... in business related to Engineer on technology or something. Because I don’t... I feel that I am not quite strong in doing the research or developing some projects with modern technology. I prefer doing with some business...

Greg: So your Engineering course gives you a professional background then hopefully from that you would like to go on to develop your own business.

Interviewee: Yeah” **Case 5**

Interviewee: “Because I’d would like to have a limited company or start my own business. I really find it hard. I really like to stay in Tasmania, and I find it quite hard to find some relevant or interesting jobs. So for me it is also quite challenging to start your own business than being an employee.

Greg: ... So in fact, you create your own employment.

Interviewee: [Yes] ...

Greg: Creating your own career pathway.

Interviewee: Yeah, yeah. I think for me it is really more interesting rather than having some jobs because I seen in a Czech movie one guy say that a successful young man is not looking for a job but rather creating jobs for other people.” **Case 8**

For one student, his business career was commenced as he was undertaking his postgraduate studies.

Interviewee: “But... at the moment I am working on a new business. General Manager Ecotourism. Business has not

generated enough money yet. I am working for free at the moment.

Greg: Is that based in Tasmania?

Interviewee: It is based in Hobart.” **Case 8**

In another case a student (Case 10) who hoped to qualify as civil engineer also hoped to establish a coffee shop with friends as an additional work enterprise.

Interviewee: “I said I want to open a coffee shop with a couple of my friends after we have a stable job and income, so we will get together and open a coffee shop.

Greg: You still want to be an engineer?

Interviewee: Yeah.

Greg: And you also want to have a coffee shop, just an extra interest.

Interviewee: Yeah, it is just an interest.” **Case 10**

A number of the interviewees (Cases 1, 2, 5, 8) expressed an intention to apply for permanent residence in Australia. By the time the interviews were conducted one student (Case 3) had been successful in achieving this.

Greg: “...was there connection between...your career intention and going through education and training system that you might actually think of going for PR?

Interviewee: Um...

Greg: Or did that come much later? Or was it coincidental that you come and study in Tasmania?

Interviewee: Um...

Greg: So your short answer is ‘No’.

Interviewee: Yeah.

Greg: Okay. And that was just something happened so coincidental thing?

Interviewee: Yeah. Residency was in my mind when I chose to study in Australia (as my parents were moving here) but I had not definitely decided I would apply for it as I didn't know if I would like living here and settle in etc etc. It was not a factor in the subject I chose to study before I decided to come here and study I was considering further study at home in this field or perhaps a grad. Recruitment position in computing that taught you on the job. So the short answer is no, but the longer answer is a little bit!" **Case 3**

Some students indicated that they were interested in Australian permanent residence in order to work for a couple of years in the country to gain professional competence.

Greg: "And you've also indicated that you are interested in PR.

Interviewee: Kind of.

Greg: Are you also still interested in permanent residence?

Interviewee: Yes.

Greg: Okay. So eventually you would like to stay in Australia?

Interviewee: ...probably work for at least a couple years.

Greg: [Yes].

Interviewee: ...because the salary in Malaysia is pretty low, so unless I get...have more experience so when I go back at least I have more experience and hopefully the salary will be higher than others." **Case 1**

The transitions that the students interviewed had undertaken varied between significant geographic changes in location through the course of

their studies (Case 6 from Sri Lanka to the Philippines to Tasmania) to the nature of their participation in twinning programs. Another student (Case 21) recounted his journey from Taiwan to Tasmania to undertake a diploma (VET qualification) and gaining advanced standing for this to commence an undergraduate degree in Queensland. In one case a student (Case 14) had commenced her Australian studies at Grade 11 and believed as a consequence that commencing her education at this relatively early stage had advantaged her. A student (Case 15) who had completed Foundation Studies in Australia found the careers advice focussed specifically on her future undergraduate program.

Greg: “... going back to careers and the fact that you went from Sri Lanka to the Philippines to do a degree, and then you got into work, then you come from work back here. That’s not the normal sort of career pathway that a student follows. ... is that all being the conscious decision on your part? To sort of have courses of study, followed by work, and the by courses of study again. Have you had a change in career objectives over the time?”

Interviewee: Yeah, I think it is more to do with circumstance, little to do with having conscious decision being taken.

Greg: I was just asking about your doing an undergraduate degree in the Philippines, then going into work and leaving work to go back to study. What factors do you think account for why you made all those changes?

Interviewee: Maybe it was because I didn’t have a definite career plan from the beginning ...

Greg: Exploring by hit and miss?

Interviewee: Yeah exactly. You can call it that.

Greg: Okay. Therefore do you think if you had had a bit more career information when you were back in high school,

you might have been a bit more definite about your directions?

Interviewee: Yeah. Exactly.” **Case 6**

Case 14 believed, as a consequence of entering at the school level as an international fee-paying student, that she had the opportunity to adjust to any changes from her home country with regard to teaching methodology, and also to changes in her living circumstances.

Greg: “Yeah. ...with regard to careers and your career pathway, do you think it’s being the benefit for you to have done year 12 here in Australia?

Interviewer: Yeah, I think so.

Greg: Do you think that means you understand more about the Australian education system than, say, someone who arrived from your country and went straight in their first year at university?

Interviewee: ... I would say that because we are used to this kind...method of education, and then...I think it is worth taking Year 12 at here.

Greg: So you have already...you have gone through a process of adjustment in Grade 11 and 12?

Interviewee: Yeah, 11 and 12.

Greg: Did you come in 11 or did you come in 12?

Interviewee: 11.

Greg: [Yes], okay. So you have already gone through two years of getting used to life in Australia before you started university.

Interviewee: Yeah”. **Case 14**

For a Foundation Studies student (Case 15) the career advice she experienced related to her prospective undergraduate degree.

Greg: “And when you were in Foundation course, did you also get any careers advice?”

Interviewee: ...yes, but...it wasn't as...when I was in the Foundation course; the advice usually was around the course I can study in the university.

Greg: Yeah, so it's far more specifically related to courses as study in the university.

Interviewee: Yes.” **Case 15**

Of the interview sample, three had participated in twinning programs (Cases 5, 7 and 18). Another student (Case 20) received 'advanced standing' because of a previous course he had undertaken. This student commented on his initial subject failures soon after arriving in Australia.

Greg: “Did you start the Bachelor of Engineering in Vietnam?”

Interviewee: Yeah. I started the first two years in Vietnam and the last two years here.” **Case 5**

The manner and mode of delivery of such programs can be an issue. Case 5 recounted adjustment issues to Australian conditions, especially English.

Interviewee: “... the problem is the lecturing and language, not academic.

Greg: No. It is just adjusting to the language.

Interviewee: Yeah.

Greg: Was your first two years [of study] in Vietnam done in English?

Interviewee: Yeah, in English.

Greg: But taught by Vietnamese lecturer?

Interviewee: Yeah.

Greg: Did you have anyone come [from the] University of Tasmania?

Interviewee: Just for a short time. A workshop or something for a couple of times a year.

Greg: So the main issue was trying to make that transition especially with language coming here.

Greg: Any other comment you would to make about that change from Vietnam to Tasmania?

Interviewee: The problem is the language is the common problem for every international student especially for Vietnamese students. I think it depends on each person. Some are good some are bad. ... I think some study English hard in order to get good background before they came over here. When they begin to study in Engineering there will be big problems.

Greg: Yeah. The other thing I thought might be an issue for you, Case 5. If you start here in your first year, you get an expectation of what lecturers and tutors want in terms of assignment work. Was that an issue when you changed from Vietnam at the end of your second year to come here to Tasmania in your third year? Was the expectation of the lecturer you had in Vietnam different from here?

Interviewee: Yeah, I think so.” **Case 5**

Interviewee: “Then I went to KL to study.

Greg: Has that presented a problem for you?

Interviewee: ...at the beginning, maybe a little bit, but now coping pretty okay.

Greg: Would you mind telling me a bit about what the problem might have been at the beginning?

Interviewee: ...what the problem might have been... probably different ways of teaching.

Greg: Right. Teaching style?

Interviewee: Yeah, teaching style. But once you get a hang of it...

Greg: So wasn't English?

Interviewee: No, it wasn't English." **Case 7**

Such programs can and do have students arriving in the middle of the course to commence their studies.

Interviewee: "Yeah, so I think it is a little bit harder for me but I guess, if you...if you...if you took from the first year of the course, then it would be easier to finish your course I think.

Greg: Now you were involved in doing a twinning program when you started as part of your program in Malaysia and then you came to Australia?

Interviewee: Yeah, I started in Malaysia because I was doing my diploma and I came here I got...I received one and a half year of exemption.

Greg: Right.

Interviewee: Yeah, it did put me in the middle of the course." **Case 18**

Whilst twinning programs would appear to assist international fee-paying students by allowing them to become established in their course before they transfer to Australia, there are questions about the certification of the home country portion of the course and the value of this certification. The purpose of such certification might need to be made clearer to the recipients.

- Greg: “Did you actually end up with a qualification from ‘.....’ College after two years or was it all part of a two year program where you sort of end up coming to Utas.
- Interviewee: I did have a certificate or diploma... I can’t use it to go to work, because it is not recognised.
- Greg: Only information.
- Interviewee: Yeah, no use.
- Greg: Just a piece of paper showed that you spent some time there. It doesn’t mean anything in terms of getting a job as an engineer.
- Interviewee: Yeah, I don’t think I can get a job at a respectable company.” **Case7**

The reasons for undertaking current studies varied from interest in particular subjects (Case 5), to siblings having previously undertaken the course (Question 3 of the focus questions for the interviews) to “the need to further enhance my knowledge and employability” Case 11. Table 4.3-16 categorises the responses as to why the interview sample decided to undertake their current course. The responses in order of significance were: interest in the subject field (36.4 %); family or friends had done the course (22.7 %); personal preference / interest (13.6 %); employment prospects good (13.6 %); keeping options open (9.1 %); and wanted experience studying overseas (4.5 %). One case that indicated interest in the subject field also commented on employment outcomes.

Table 4.3-16 Responses to Question 3 - What Prompted You to Undertake Your Current Course?

Reasons	Number	Percent
Interest in subject field	8	36.4
Family or friends had done the course	5	22.7
Personal preference/interest	3	13.6
Employment prospects good	3	13.6
Double degree or two courses- keeping career options open	2	9.1
Wanted experience studying overseas	1	4.6
Total	22	

Over the period between completing the questionnaire and being interviewed (Table 3.16-1 Interview Sample Characteristics), two students had changed their career intention as recorded in response to focus question 4 (Cases 12 and 14) whilst for others they had refined their career intentions (Case 17).

Interviewee: “...when I was in high school, because I studied in ...ah my strength is in Mathematics and Physics, some subjects related to Engineering so I decided go to study Engineering.” **Case 5**

Interviewee: “I have changed my mind.

Greg: Oh, okay then. Can you tell me why you have changed your mind?

Interviewee: Yeah, because I said that...I thought was going to do that, then I realised that I didn’t have the ability like some...the ability to do marketing or international business, and I found that Commerce course is too broad for me.” **Case 14**

Whilst Case 14 has changed her mind about her specific career intention she is was in the first year of a double degree when interviewed and was still keeping her career options open.

In response to focus question 5 (does your degree studies relate to your intended career?) 91 percent of respondents answered 'yes'. Two students (Cases 16 and 19) answered 'no'. For one student (Case 16) she had had a change in intended career, and for the other student (Case 19) he was studying a postgraduate qualification and his motivation for studying in Australia was to obtain experience studying overseas. Another student (Case 5) expressed the opinion that he wished that there was a greater business component in his course.

Focus question 6 at the interviews related to whether the student had investigated the recognition of the course they were undertaking in their home country. Questions 27 and 28 on the questionnaire related to this issue also. In asking the question at interview it was hoped that a greater understanding of whether and how students had researched the recognition of their Australian qualification in their home country might be gained. Of the interview sample of 22, 17 said they had researched this issue, two more thought they might have ("guess so", "think so"), two were "not sure" and one said "no". The response rate from the total questionnaire sample was 52.7 percent. The awareness about this issue by the students interviewed was considerably higher with 77.3 percent saying that 'yes' that their degree was recognised in their home country. Students appear to have been clearer in their responses for bachelor degrees than for postgraduate qualifications as evident from the response from Case 20:

Interviewee: "...Bachelors I believe so. For Masters I haven't checked that yet..." **Case 20**

Other issues raised by students at the interviews (in response to focus question 10 'any other comment on careers') were the nature of

internships or practicums in their course, adjustment to Australian conditions and teaching methodology, comparative judgements about their home country's education and training system with that of Australia and the affordability of Australia as a destination compared to the USA or the UK (Case 10).

With respect to the practicum, four students discussed these at interview. There were a number of points raised not least of which was that some students were required to find their own positions and the difficulties this might pose if they were not familiar with Australian conditions or had no access to Australian networks. Whilst based in a course in Australia there also appeared to be problems accessing a practicum position back in their home country, as outlined by the student below (Case 15).

Greg: "...does your current course have a practical component, an internship or going out into the field to do any work as an environmental engineer?"

Interviewee: "...for us, we need to complete...how many weeks...I think 12 weeks on internship.

Greg: [Yes].

Interviewee: But...our course doesn't provide any information for us how to choose...they don't provide some jobs for us choose but we need to find by ourselves in order to complete our course.

Greg: Did you do that placement in Australia or did you go back to Hong Kong to do that placement?

Interviewee: For me...I am still working on how to send a cover letter and resume for me...to help out here.

Greg: Okay.

Interviewee: But I had that...um...for the local...um...students here they...it is pretty hard for them to find a vacation

work...for us...even harder, because most of them will restrict...ah...positions for local students.

Greg: Sure. Okay.” **Case 15**

One student (Case 5) explained the difficulties of securing such a practical placement back in their home country when it appeared undertakings had been made to access such placements as part of a twinning program.

Interviewee: “... when I was here last year, because before we left, we had a certificate certified that we had twinning work experience. Last year when I tried to apply, many companies here, but they all already filled. I tried to apply in the mainland also but no one accept my application, so I had to go back to Vietnam. ... a little bit disappointed because ... it required work experience but when I applied for a job no one from the Uni even they have a course about how to write a resume and they send my resume to some companies in Tasmania. But after I think a few weeks, only one or two of us had the interview. And the rest had a letter say that you have to find your own company and you have to do by yourself. I don't think it is really good at all.” **Case 5**

Not all students enjoyed having a practicum as part of their course. But for one student (Case 6) there was a strong regret that there was not the opportunity of accessing a practicum as part of the course.

Greg: “Explain to me, the current degree, does that give you some sort of practical internship or experience of finding out about that sort of role?”

Interviewee: No, unfortunately it doesn't but I wish it did. I wish it gave some sort of support through the internship but the course I am doing doesn't give that.” **Case 6**

Attitudes varied considerably about the value of receiving an education overseas. One student (Case 9) appeared concerned at whether lecturers adjust their material to take account of international fee-paying students, while another (Case 22) gave a ringing endorsement of the value of studying with a range of classmates from a number of countries.

Interviewee: “This is more or less due to the teaching environment and attitude conducted by the local system here. Some lecturers would have just mention and briefly discuss several general concepts without willing to let us discuss and learn more deeply. They expect us to go through almost all of the entire course and yet we are fresh. Yet, what is the difference to pay the fees in order to buy a seat in the lecture room... Of course, we would try our very best to learn and research but really, to nowhere this can go? Apparently, time is of essence. We didn’t expect lecturer to give tips or more we can say ‘spoon-feeding’, but at least have a thought of conscience to teach and giving more information and examples that could boost our confident and interest in studies. I am not mentioning all of the lecturers here but some.” **Case 9**

Interviewee: “I found that the education and training system in Australia is really fun mainly because of the opportunities I have had to meet lots of international students from all over the world as well as Australian students and people are really friendly and approachable. In addition, I found that the education system is well organised in terms of accessing lecture notes, the teaching styles and the facilities provided for the students. Although the contents of the course can be very hard to understand sometimes...” **Case 22**

Other students (such as Case 13) noted the differences in approach and teaching methodology between Australia and her home country education system of Hong Kong SAR.

Interviewee: “...there are not a lot of differences in the Australian education system...in Australia, the education is provide...allow the students to learn more by themselves. In other countries, normally the teachers will provide all the information to the students. Here the teachers ask the students to find everything by themselves.” **Case 13**

One student (Case 17) compared not only the difference in teaching style but also the nature and frequency of assessment between Australia and her home country.

Interviewee: “Teaching style is very different...”

Greg: Why?

Interviewee: ...I thought it typical at first time was [the Australian] accent...and then that faded away...I find it hard because I am not tested frequently so it is more of my responsibility to do my basic study everyday...

Greg: [Yes].

Interviewee: ...and at the end of semester you are tested everything that I have learned, rather than being tested every two weeks.” **Case 17**

She also commented on the lack of variety in assessment formats in her course.

Greg: “Have you found in the course you selected and the subject you selected the main vehicle for assessment

being essays, or have you also been given assignments or projects work or something like that?

Interviewee: ...I was given as much as I was in first year but I think that topic ...you get more as you go along...but...a lot of the...what they want in their answers they want in the essay form, even though you might probably do short answer but I think given at home multiple choice, and I find that daunting as well, it is kind of nice to have...kind of even..." **Case 17**

In terms of the nature of career advice offered by their current institutions (focus question 7 at the interviews) a number of students (including Cases 2, 3, 5, 8, 18, 19, 20 and 22) accessed careers advice at their current institution through the careers office, faculty office or international office. Some (specifically Cases 19, 20 and 22) commented on visit programs from professional institutes organised through the faculty or careers office undertaken through the course.

Interviewee: "From Institute of Electrical Engineering.

Greg: Right.

Interviewee: Yeah, IEE

Greg: So they have come in and talked about the engineering profession?

Interviewee: Yeah ." **Case 19**

Interviewee: "...yes. Bachelor, yes, especially in final year there were talks, workshops, they invited prospective employers." **Case 20**

Interviewee: "...yes, they came our uni and talked about Engineering.

Yes the Institute of Chemical Engineering (ICChemE) did come to Curtin a few times and talked about the development of the industry as well as current job opportunities for chemical engineering graduates.

Also, the Department of Chemical Engineering asks their students to be a member of IChemE as well as Institute of Engineers, Australia (IEAust) to receive valuable information in chemical engineering areas every week.” **Case 22**

A further five students had accessed career advice at their current institution in other ways including Cases 13,15 and 16 who had received advice on course counselling and careers (including advice on resume writing and applying for jobs), Case 10 who had accessed the careers website at their institution and Case 1 who had received advice on vocation employment. Case 21 responded that he had conducted self research while several students interviewed (Cases 4, 6, 7, 9, 11, 12, 14, 17 and 21) had not received careers advice at their current institution. These Cases represented 41 percent of the sample interviewed.

In response to question 8 (what do you understand by the term credit-transfer?) 17 students answered that they understood the term. This was 77 percent of the interview sample and compares favourably to the response of 51 percent for the total population who responded to question 19 on the questionnaire. The most common source of information about credit-transfer (question 9) for the interview sample was the course advisor. This coincides with the responses to question 20 on the questionnaire where the course advisor was the source of information about credit-transfer for 34 percent of the total sample.

In response to question 8, Case 12 said;

Interviewee: “...yeah...it’s like...you did a tertiary education before, some people go to another uni or did a like...maybe a further study so they got the credit which is exactly the same subjects they did two different...institution I would say, so you got the credit- transfer later on and

you don't have to do that stuff again. That's what my understanding is." **Case 12**

In response to question 9, Case 7 responded;

Interviewee: "I probably found that out, as I said my sisters all went abroad, so I had a fair bit of idea about credit-transfer system." **Case 7**

In terms of articulation arrangements within the Australian education and training system, Case 21 explained credit-transfer through his experiences;

Greg: "So your course in Tasmania was a two year diploma?"

Interviewee: Yeah.

Greg: So...

Interviewee: One year diploma...and...and...one year and a half year for certificate.

Greg: Oh, okay. So one and a half year certificate and followed by one year diploma. So what does that mean in terms of time that saves off your degree? Did they give you one year of your degree?

Interviewee: Yeah , one year." **Case 21**

Additional comments supplied in relation to question 10 (any other comments on careers) related to comparative judgements about teaching methodology, and they raised questions about the level and nature of adjustment that students make to the Australian education and training system. Cases 9 and 15 express the following concerns:

"My career intention is to be a civil engineer. Well, I can't say that I have to totally change my career path. But to the moment now and then, I felt shaky.' **Case 9**

Interviewee: “...so I find it very easy to study Foundation course and the course structure is quite...like Hong Kong it is not really what I expected...um...I expect...the Australian education would be more outgoing, and more variety of...I mean...the teaching style will be more active as in Hong Kong, but it is just like nearly the same...and just do...read the book and then go for exams something like that.

Greg: Yeah, so that’s been a bit disappointing for you?

Interviewee ...initially yes, but because I just want to study for a degree so I need to accept.” **Case 15**

Both cases raise issues about the level of awareness amongst lecturers and teachers of international fee-paying students, and of their needs and concerns when they were part of the total student population.

4.4 RESULTS BY INSTITUTIONS

This section considers the responses from the questionnaires and the interview sample based on an analysis institution by institution. As a consequence of some of the South Australian schools samples being smaller, there is an aggregation of some of data and a resultant discussion of the aggregated data. An important aspect of this study was presenting the results from both the questionnaire and interviews, sharing this with institutional representatives (Appendix 11) and seeking their input and comments on the data along with any issues that arose.

4.4.1 COMPARATIVE ENROLMENT DATA

Approaches to universities in 2002-2003 in arranging participation in this study were based on the Australian onshore enrolment data (Appendix 9, Table 1) for Engineering, Computer Science, Science and Mathematics. According to this data, Monash University was ranked fourth (571 enrolments), Curtin University of Technology seventh (242 enrolments), and the University of Tasmania fourteenth (93 enrolments) in

Engineering enrolments respectively. For Computer Science, Monash was ranked first with 1216 enrolments and fifth in Science with 155 enrolments. None of the universities that participated in the distribution of the questionnaires were ranked in the top three for undergraduate Mathematics enrolments. As can be seen from this data, the numbers of international fee-paying students enrolled in Mathematics programs were relatively small.

Information was sourced from the Australian Computer Society (ACS) which is the Skills Assessing authority for applicants seeking permanent residence to Australia for IT/Computing. Usually such applicants are graduates from IT and computing programs who have their degree and course transcripts assessed for a specific occupation. This assessment from the ASC is then put forward by the applicant for permanent residence to the Department of Immigration, Multicultural and Indigenous Affairs. The data (Appendix 9, Table 2) shows the originating institution for IT and Computing and the numbers of international fee-paying students who have undertaken this process. The data is for 2001. The universities who participated in this study are respectively ranked second (Monash, 613 students), eleventh (Curtin, 213 students), nineteenth (Canberra, 77 students) and thirty-first (Tasmania, 16 students). Again this data assisted in both approaching and selecting institutions to participate in the study.

Appendix 9, Table 3 has an extract of the data for higher education institution enrolments by field of study for those enrolments that commenced at the four universities used in this study in 2003 (this is the year in which the questionnaire was distributed). The relative size of the institutions can be gauged from this data with Monash being the biggest, followed by Curtin, Tasmania and Canberra. The data is for all students including international fee-paying students. Monash has the largest programs in all three broad fields of study (Natural and Physical Sciences, IT, and Engineering and Related Technologies). Curtin has the

second largest enrolment of the four universities in the Natural and Physical Sciences and Engineering but not IT, where Tasmania has the second biggest enrolment. Of all the four universities, Canberra has the smallest enrolment in all three fields of study areas.

The data included in Appendix 9, Table 4 relates to international fee-paying students. This table displays the total international fee-paying enrolment at the four universities used in this study. Monash University has the largest total international enrolment (15,996) followed respectively by Curtin University of Technology (13,624), the University of Canberra (2,257) and the University of Tasmania (1,899) based on 2003 data. The institution order remains the same when the onshore and offshore enrolment patterns are analysed with Monash remaining the largest of the four universities for international fee-paying enrolments.

4.4.2 CURTIN UNIVERSITY OF TECHNOLOGY

4.4.2.1 Questionnaire Sample

The Curtin University of Technology students represented 26.4 percent of the international fee-paying students in the questionnaire sample. Of the questionnaire sample Cases 80 to 108 were completed by Curtin students. The majority of the sample fell into the 21-23 and 24 plus age group (12 students each). The remaining students were in the 19-20 age groups (4) and 17-18 age groups (1).

4.4.2.2 Population Characteristics

There were 29 responses (males 18 and females 11). The percentage of males was slightly higher than for the other institutions included in the questionnaire sample. In terms of nationalities the Curtin sample consisted of students from eleven countries. The major country represented by the students was Indonesia with ten students. The Curtin Indonesian students represented almost all of the Indonesian fee-paying students represented in the questionnaire sample. Other countries

represented were Malaysia (4), Singapore (4), Thailand (4) and one each from the PRC, India, Brunei, Emirates, Myanmar, Vietnam and Kenya.

The sample consisted of 17 undergraduates and 12 postgraduates. This proportion of students split between undergraduates and postgraduates was similar to other universities included in the sample, with the exception of the University of Canberra. The percentage for undergraduates and postgraduates at Curtin were 58.6 and 41.4 compared to a mean of 63.4 and 36.6. Of the students included in the questionnaire sample they described their standard of English as 'Advanced' (2), 'Good' (13), 'Intermediate' (10) and 'Needs Improving' (4).

4.4.2.3 *Educational Background*

The previous courses completed by the students were; Grade11/12 (2), VET (10), undergraduate (5), Foundation Studies (6), other (5) and not specified (1). Of the five 'others' three were Masters students and the remaining two did not specify a program. The Curtin numbers nearly represented half of the Foundation Studies students for the questionnaire sample.

Of the Curtin Sample, 19 students had studied their previous qualification overseas and 10 in Australia. This was similar to the students who had studied at the other major universities in the sample. Three students indicated that they had participated in twinning programs. Of these students two had participated in a Bachelor of Engineering and one a Bachelor of Science program. Their studies were full time and campus based. In terms of their success at these programs, one rated it as 'excellent' and the other two as 'good'. In response to what they found as the major concern in transferring from offshore to onshore programs, all three identified English language as the main concern. This concern was the same as that identified by the majority of the sample in similar circumstances. In terms of how they had found the course work in

Australia on arriving, two described it as 'difficult' and one as 'the same' as the offshore program.

Of the remainder of the questionnaire sample, 22 described their last course as involving units of Science and/or Engineering while four said no, that their previous course did not include these units. Of the 22 the majority (10) described the qualification as 'other', 7 had studied a Bachelor of Science, 4 a Bachelor of Engineering and 1 a Bachelor of Science/Engineering. The majority of those that recorded 'other' had gained VET qualifications; Diploma of Engineering (2), Diploma of Mechanical Engineering (1), and Diploma in Automotive Engineering (1), Diploma of Information Technology (1), and Diploma unspecified (3), and Foundation Studies (1) and Year 12 qualifications (1). For the 22 students 21 had studied their previous course full time and one part time. All had studied in an on-campus mode of delivery. For their results the students rated their performance as; 'excellent' (7), 'good' (7), 'satisfactory' (5) and 'needs improvement' (3).

4.4.2.4 *Current Educational Studies*

The students identified their current studies as postgraduate 10, undergraduate 17 and Cases 97 and 104 identified their course as being 'other'. Case 97 was carrying out a PhD by research, and Case 104 a Masters degree. If both these cases were included in postgraduate the percent split between postgraduate and undergraduate would have been 41 and 59 per cent respectively. This was similar to one of the other universities in the sample, but divergent from the 30:70 split that had been planned for in the questionnaire distribution.

The largest proportion of the Curtin sample commenced their course in 2003 the year in which the questionnaire was distributed. Of the sample, 3 students commenced their studies in 1999, 3 in 2001, 8 in 2002 and 15 in 2003. The three students who commenced in 1999 were amongst a small group who had been enrolled in their course for the longest period.

The Curtin sample as a whole all identified their current course as one relating to a course that was included in the Science and /or Engineering broad field of studies.

Just over half of the sample responded that they understood the term credit-transfer (15 responses or 51.7 %). This was almost the same as the mean for the whole questionnaire sample (51.8 per cent responded yes). Of the 15, the largest proportion (6) identified 'course advisors' as being responsible for explaining the term to them, while four said it was an 'Australian institution', three their 'agent' and two 'other'. The two who recorded 'other' (Cases 106 and 107) sourced their information from friends.

A greater proportion of the Curtin sample participated in introductory academic programs. Of the sample 17 (or 60.7 %) responded 'yes'. The mean for the questionnaire sample was 39.8 percent. The Curtin sample result was considerably higher than that for the mean of all institutions. Of those that participated in such programs the response on its usefulness was similar to the mean for the whole sample (excellent 6.3 %, good 43.8 %, satisfactory 37.5 % and needs improving 12.5 %).

For the questions on rating the quality of teaching in their current course, the Curtin sample gave ratings considerably higher than the mean for the total sample, while for rating their satisfaction with the institution, the Curtin sample result was just below the mean. The respective figures for teaching quality were 'excellent' 10.3 percent, 'good' 41.4 percent, 'satisfactory' 27.6 percent, 'needs improving' 17.2 percent, 'unsatisfactory' 3.4 percent while for rating the institution 'excellent' 3.4 percent, 'good' 51.7 percent, 'satisfactory' 31 percent and 'needs improving' 13.8 percent. The only major variation was that no 'unsatisfactory' result was recorded for Curtin, while it was in the mean for rating the institution. In terms of what the sample members thought

their final result might be, they reported: 'excellent' one, 'good' 16, 'satisfactory' eight and 'needs improving' four.

From the sample, 17 students (58.6 %) replied 'yes' that they had researched whether their current course was recognised by a professional body or society in their home country. This compared favourably with the mean for the total sample of 53.7 percent. Fifteen reported on who they had consulted with. The sources used were home country authorities (6), Australian Education Centres (6), Australian institution (1) and other (2). Cases 92 and 106 reported 'other' as being "friends".

The Curtin sample rated the highest participation in conferences compared to the total questionnaire sample. Of the 19 responses, eight commented on conferences, eight work experience, six participation in clubs and societies, three leadership positions and two participated in courses relating to their studies.

4.4.2.5 *Future Educational Studies*

In response to the question of whether the students would remain in Australia after they had completed their current studies, 13 responded yes. For the remaining 16 students the reasons given for not staying were: that they were 'returning home for business or employment reasons' (8), their 'student visa had expired' (7); and 'other' (1). The one 'other', Case 84, gave as the reason "not enough points to apply for PR". For those remaining the proposed future destinations given were postgraduate studies, 11 responses, and other, two responses. For the two 'others' Case 89 was proposing to "work and then do masters" and Case 91 was also proposing to go into "employment or business".

A higher proportion of the Curtin sample compared to the total sample proposed to take further formal qualifications after completing their Australian qualifications. Of the 24 responses, 18 answered 'yes' (75 percent) compared to the mean of 67.3 percent for the total sample. For

those continuing the proposed qualifications were: Postgraduate (1), Post Doctoral research (4), Masters (1), Masters of Chemical Engineering (1), CISCO Network (1), MBA (1), Business Management (3), Masters Computer Science (1), and Bachelor of Commerce (1). For those students indicating that they were not taking up further qualifications the reasons given were: “aim to do Masters of Engineering” (Case 81); “I think it’s already enough” (Case 86); “no reason” (Case 94); “hope to start with my research soon” (Case 97); “not sure about the future” (Case 101); and “enough study” (Case 107).

4.4.2.6 *Career*

The number of Curtin students (9, or 33.3% of respondents) acknowledging have had career advice or counselling in their home country before coming to Australia was slightly higher than the mean for the total sample (27.2 %). This response rate was higher than any of the other institutions surveyed.

Table 4.4-1 indicates the range of intended careers of the Curtin questionnaire sample. Nearly half the sample that responded (14), indicated careers that linked with engineering. The intended careers appear to match closely against the fields of study associated with this sample. In response to how well the students thought the current course prepared them for their career the sample recorded ‘very well’ seven, ‘fairly well’ 11 and ‘reasonably well’ 11. This approximated the mean for the total sample. Importantly no individual reported ‘not at all’.

The Curtin students accessed career advice at their current institution at a lower level compared to all the other institutions in the sample. Those that accessed career advice numbered 12 students (or 41.4 percent). The mean for all institutions was 57.8 percent. Of the 12 respondents who accessed careers advice at Curtin, seven described the advice as ‘good’, four ‘satisfactory’ and one ‘needs improving’. This rating describing the quality of the advice rated better than that recorded for other institutions.

Table 4.4-1 Intended Careers - Curtin

Careers Grouped	Career	Number
Engineer	Automotive industry	2
	Chemical engineer	2
	Civil engineer	1
	Engineer	4
	Engineer/science & technology	1
	Engineer or business manager	2
	Mechanical engineer	1
	Software engineer	1
Information Technology	Computer communications	1
	IT	1
Science/mathematics	Actuary	1
	Chemist	2
	Scientist	1
Other/ungrouped	Lecturer	3
	Manager	1
	Researcher	1
	Soldier	1
Not sure		1
Cases missing		2
n =		29

4.4.2.7 Interview Sample

Section E of the questionnaire invited students to give their contact details for further contact to discuss the Australian education and training system. Of the 29 respondents to the questionnaire eight students were willing to be interviewed. In the case of Curtin students, three emails addresses were no longer found to be current and as a consequence, only two Curtin students (questionnaire Cases 101 and 88, interview Cases 11 and 22) participated in the interview sample.

Case 11 was 24 + years old and Case 22 was 17-18 years old while the former was a postgraduate and the latter an undergraduate student. Both students had attended government high schools but Case 11 had previously studied a VET qualification and Case 22 Foundation Studies. Case 11 has completed his course and returned home to Malaysia where he is currently looking for employment as an engineer in the automotive industry. He provided a written submission. Case 22 is also from Malaysia but is still enrolled in his course at Curtin. He intends to be a chemical engineer.

Case 11 appears to have enjoyed his postgraduate studies at Curtin. Case 22 decided to enrol in an engineering course because his brother had also done engineering. He also enjoyed Mathematics at school.

Greg: “... you have an aptitude for Engineering? You like doing those sorts of subjects?”

Interviewee: Yes, every Engineering subject. Yes. Also, Math is my favourite subject and I know Engineering subjects involve a lot of Math.” **Case 22**

For Case 22 in terms of career preparation at Curtin he commented favourably on the Institute of Chemical Engineers and the Institute of Engineers Australia visiting the university to talk about employment opportunities. He also commented favourably on the cultural diversity of the student population at Curtin and the supportive and helpful lecturers.

Advice received as part of the consultation feedback on the results gained from the questionnaires at Curtin (with the Dean of International) was that Polytechnic graduates from Singapore should not be equated with VET sector. This involves four students (Cases 80, 86, 95, and 96). Cases 80 and 95 had attended the Nanyang Polytechnic and Cases 86 and 96 had attended the Singapore Polytechnic. Such graduates are usually given a year plus two units RPL (about 1.5 years) advanced standing into Curtin programs.

4.4.3 MONASH UNIVERSITY

4.4.3.1 Questionnaire Sample

The Monash University international fee-paying students in the sample represent 20 percent of the total questionnaire sample. The Monash students represent cases 1 to 22 of the total question sample.

4.4.3.2 Population Characteristics

Twenty two students at Monash participated in completing the questionnaire. This sample had proportionally more females than for the total sample and consisted of 10 males and 12 females. The students represented a range of nationalities with the largest representation from Hong Kong (5), India (4) and Malaysia (4). The remainder came from Singapore (2) and one each from the PRC, Indonesia, Thailand, Argentina, Mauritius, Russia and the UK. The majority of students from Hong Kong and India in the total sample studied at Monash.

The sample consisted of 12 students who were undergraduates, and 10 who were taking postgraduate studies. This 54.5/45.5 percent ratio of the sample is weighed more towards postgraduates when compared to the population for this field and level of study at Monash (Png, 2005).

A higher proportion of the Monash students in the sample indicated having an English language level of 'advanced' (6) or 'good' (8) when compared to the mean for the total sample. This is to be expected given the higher proportion of students studying at a postgraduate level. Of the remaining members of the sample, five identified their English language level as 'intermediate' and three that their English 'needs improving'.

4.4.3.3 Educational Background

Prior to their current course the Monash sample had studied at Grade 11/12 (4), VET (5), as undergraduates (10), and in Foundation Studies programs (3). This represented a higher proportion of undergraduates and

a lower proportion of grade 11/12 compared to the mean of the total sample. This reflects the postgraduate nature of the current studies of the Monash sample.

Of the twenty two students, fourteen had completed their previous course overseas and eight in Australia. This pattern approximates that for the total sample. Of the fourteen students who had most recently completed their course overseas, two (Cases 1 and 6) had completed an 'other' Australian qualification. For Case 1, no qualification was specified, while for Case 6 he had completed South Australian matriculation. Both students completed their studies full time and on campus. They rated their success in the course as 'excellent' and only one of the two responded to the question on their greatest concern transferring from offshore to onshore. The concern noted was in relation to teaching style, with the same respondent commenting that the course work in Australia was "difficult".

For the remaining twenty students, thirteen had completed their previous course incorporating units in Science and /or Engineering and seven had not. This ratio was consistent with the total sample. Of the thirteen students the greatest number had completed a qualification described 'other' (7), the remainder had completed a Bachelor of Engineering (5) and a Bachelor of Science (1). Those that completed an 'other' qualification were Cases 2, 4, 5, 10, 12, 17 and 20. The qualifications completed previously had been a Diploma of Chemical Processing Technology (Case 2), Western Australian matriculation (Case 4), Foundation Studies (Case 5), Diploma in Electronics, Computing and Communication Engineering (Case 10), Foundation Studies (Case 12), Diploma of Technology (Computing) (Case 17) whilst Case 20 did not specify a qualification. The proportion nominating the 'other' category was relatively high in relation to the total sample but was not unexpected when viewed in relation to the responses for question 7 and the five students who had previously completed a VET qualification. Of the 13

students, 12 had completed their studies full time and one part time. All responded that they had completed these studies on campus. In terms of their results for the previous course those nominating 'good' was higher than the mean for the total sample. The results were: 'excellent' 1, 'good' 9 and 'satisfactory' 3.

4.4.3.4 *Current Educational Studies*

For their current studies 13 students were undergraduates and 9 postgraduates. The majority (10) commenced their course in 2003, the year the questionnaire was distributed while the remainder had commenced in 2002 (9) and 2001 (3). Only 16 of the students identified themselves as Science and/or Engineering students. This issue was discussed earlier in Chapter 4.

A majority of the sample responded that they understood the term credit-transfer. The positive response rate of 63.6 percent was higher than that of the mean for all institutions of 51.8 percent. This is not unexpected given the proportion of postgraduates. Only nine of the 14 responded on the source of their knowledge about credit-transfer. The main source of information for the sample members was 'Australian institution' (5), 'course advisor' (2), 'agent' (1) and 'teacher' (1). The proportion answering 'Australian institution' from Monash was much higher than for other institutions and yet participation by the Monash sample in introductory orientation programs was much lower compared to the mean for the other institutions. Again this can be attributed to the proportion of the sample that were undertaking postgraduate studies and therefore might not need to do such programs. For the seven students who commented on such programs (only five had done these programs) their usefulness was rated as 'good' (2), 'satisfactory' (2) and 'needs improving' (3).

A high proportion of the sample rated the quality of teaching associated with their current course as 'needing to improve' (9) and 'unsatisfactory'

(1). Of the remaining individuals in the sample the majority responded that the quality of teaching was 'good' (7) or 'satisfactory' (5). The satisfaction level with Monash rated more highly with the responses being 'excellent' 3, 'good' 5, 'satisfactory' 10, 'needs improving' 3 and 'unsatisfactory' 1. There was a higher proportion of 'satisfactory' recorded by the sample compared to the mean for all institutions. The students anticipated their final result in their course to likely to be 'excellent' 1, 'good' 7, 'satisfactory' 11 and 'needs improving' 3. The satisfactory level for results was higher in comparison to the mean for all institutions.

The Monash sample did not appear to have been as concerned about the recognition of their course by a professional body or society in their home country. Only eight of the sample responded 'yes' to whether their course was recognised in their home country. This response rate was not as high as the mean of all institutions and lower than that for Curtin or Tasmania universities. For the eight who had researched this factor, the main sources of knowledge were 'Australian Education Centres' (4), 'home country authorities' (3) and 'other' (1). 'Other' was given as a response by Case 3 but her source of information was not specified. The Monash responses for participation in course activities were: 'societies and clubs' (5), 'conferences' (2), 'competitions' (1) and 'work experience' (1).

4.4.3.5 *Future Educational Studies*

In response to the question 'will you remain in Australia for future educational studies?' seven students from Monash answered 'yes'. This proportion (31.8 percent) was considerably lower than the mean of all the institutions of 58.3 percent. The reasons given by the 15 who said 'no' and were returning home were: 'employment / business' 9; 'student visa had expired' 3; 'unable to meet course requirements' 1; and 'other' 2. These responses were comparable to that of other institutions. For the two students who answered 'other', one Case 8 stated "going to study in

another country” and Case 20 “I like home”. For those students continuing with future study plans, all seven responded that they planned to undertake postgraduate studies. Of the Monash sample 11 (52.4%) students indicated that they intended to continue with formal qualification.

4.4.3.6 Career

A high proportion of the Monash sample did not have careers advice before arriving in Australia with only four (18.2%) of the sample answering yes in response to question 34. The result was considerably lower than the mean for the total questionnaire sample (27.2%). It was also lower than that for the other universities (except Canberra) in the sample.

Table 4.4-2 Intended Careers - Monash

Careers Grouped	Career	Number
Engineer	Construction engineer	1
	Electrical engineering	1
	Engineer	2
	Mechanical engineer	2
	Sale engineer	1
Information Technology	Computer programmer	1
	IT	1
	System analysis	1
	Telecom and networking	1
Science	Environmental engineer	1
	Psychologist	1
	Researcher	3
Other/ungrouped	Bank/Marketing	1
	Business	2
	Entrepreneur	1
	Marketing	1
Not sure		1
n =		22

The intended careers of the Monash students (Table 4.4-2) highlight the breadth of intended occupational roles. The assigning of intended careers to groups is a crude method of viewing the relationship between the fields of study and intended occupational roles. Even though there could be a debate about some of the assignment of careers, in relative terms for this sample the engineer group would appear more important and involves seven students. The remaining IT groups involve four students and Science five students, while the other/ungrouped category also has five students, with a student not sure of his future career choice. There was a divergence in the relationship between intended career and how well the current course prepared the student for the career. The responses were 'very well' 3, 'fairly well' 4, 'reasonably well' 12 and 'not at all well' 3. The response rate for very well and fairly well were less than that for the whole sample. It is not clear why three students responded 'not at all well'.

The accessing of career advice at Monash for the students (45 %) was below that of the mean for the total sample. This may, in part, be because as a group of students with a higher proportion of postgraduates, the students may have already accessed such advice. For the ten students who had accessed such advice they reported the effectiveness of this advice to be: 'excellent' 1, 'good' 1, 'satisfactory' 5, 'needs improving' 2 and 'unsatisfactory' 1.

4.4.3.7 *Interview Sample*

Ten students or 45 percent of the sample indicated their willingness to be interviewed while six students were subsequently interviewed. These students were questionnaire cases 5, 21, 8, 20, 7, 18, and interview cases 12, 13, 15, 16, 19, and 20 respectively. Of the Monash students interviewed, three were males and three females. All students were interviewed by telephone, with one of the students providing additional written comments on his views of Australian education and training.

Half of the Monash interviewees came from Hong Kong with the others from Argentina, Malaysia and Mauritius. Three were aged 24 years plus and two were 21-23 years old and one 19-20 years old. Their fields of study were Science (2), Engineering (3) and IT (1). Two of the students were postgraduates and the other four undergraduates. Their English levels were 'advanced' (1), 'good' (3), 'intermediate' (1) and 'needs improving' (1). Five of the six went to government high schools although one of these transferred from government to private school during his secondary school years. Two of the students had previously studied Foundation Studies and one a VET program.

Interestingly, all six students interviewed had received careers advice at high school. For two this had involved course counselling, for two more it involved information about jobs, for one it was about personal strengths and weaknesses and for another it was information about universities and college. Of the six, two were completing double degrees or courses, two were interested in the subject field, one thought the employment prospects were good and one other wanted an experience studying overseas. Their intended careers were: psychologist, systems analyst, environmental engineer, entrepreneur, electrical engineer and engineer. Two students (Cases 12 and 16) stated at interview that their course and career intention did not match very well (interview question 4 responses). In the approximate ten months between completing the questionnaire and being interviewed, two had changed their minds about their career direction (Case 12 and 16).

The reasons given by interviewee Case 12 were;

Greg: "... a year ago you thought you would be a psychologist...

Interviewee: Yeah, right.

Greg: You still thinking that is what you might be, or?

Interviewee: No, no, no, definitely I would not, because being a psychologist; my mark is not enough to get into like...postgraduate psychology...

Greg: Right.

Interviewee: So...um...I would say that like...in my start of this year which is my third year, I actually changed my career mind so I am not doing...not wanting to be a psychologist, but I want to work in a communications field which...um...like a corporate communications that kind of stuff. I think that I am more interested in, you know, media communications, rather than psychology throughout my years of study.

Greg: Okay. So basically you decided that because your academic background is not strong enough in Psychology that...

Interviewee: Yeah, also it sort of interests me in my...like later on...

Greg: [Yes].

Interviewee: In first year and second, Psychology is, I would say easier, so it is interesting. But later on it gets more into statistical and experiment stuff that which...I am totally not interested into it at all." **Case 12**

For Case 12 this raises doubts about whether she was clear about what was involved in her course and if she had realistic expectations. For Case 16 it was not so much a change of mind but a refinement of direction.

Greg: "I found the answer now...you put entrepreneur.

Interviewee: ...I was using those sort terms but I still that idea but entrepreneur is more commercial focused.

Greg: [Yes].

Interviewee: But still something like that but switch to more related to human development.

Greg: ... human development, development aid sort of issues.

Interviewee: Yeah, I mean...but...not in the sense , not just pure aid but, say, development from within the community, so that means some sort of entrepreneurship...ah...for myself but also for people I am working with.” **Case 16**

Five of the six students interviewed accessed career advice at Monash. This advice ranged from course counselling, resume writing and applying for jobs, to listening to speakers from a professional association to meeting with prospective employers. Two students were not sure about the meaning of credit-transfer on completing the questionnaire but showed at interview that they had a basic understanding.

Some students, as interview Case 12 explains, had planned to undertake their overseas education for some time (the decision was formulated in high school).

Interviewee: “...I think of studying overseas even when I was in high school, so...um...I first started thinking of going to...um...UK, but later on I came to Australia because it is a cheaper choice...” **Case 12**

4.4.4 UNIVERSITY OF CANBERRA

4.4.4.1 Questionnaire Sample

The University of Canberra students represent 1.8 percent of the international fee-paying students in the questionnaire sample. Of the questionnaire sample, Cases 78 and 79 were completed by Canberra students.

4.4.4.2 *Population Characteristics and Educational Background*

Both of the students who completed the questionnaire from Canberra were males. They came from Malaysia and Singapore and were studying as postgraduates. They rated their English as 'advanced' (1) and 'good' (1). They had both just completed their undergraduate degrees, one overseas and one in Australia, the qualifications they had gained being a Bachelor of Science and a Bachelor of Science and Engineering. These qualifications had both been completed full time and on campus. The students described their results as 'excellent' (1) and 'good' (1).

4.4.4.3 *Current Educational Studies and Future Educational Studies*

Both students were undertaking postgraduate studies. They had commenced in 2002 and 2003 respectively. They were doing courses involving Science and Engineering. For credit-transfer (question 19) only one of the two was familiar with this term. His source of information was a marketing representative. One of the two students had completed an introductory academic program which he described as being 'good'.

In response to the question 'how would you rate the quality of teaching with your current course?' the students responded 'good' (1) and 'needs improving' (1) respectively. They described the institution as 'excellent' (1) and 'good' (1). Only one of the students had researched the professional recognition of his course and his source was an 'Australian institution'. Both students participated in societies and clubs relating to their course and one in a competition also. Of the two students, one indicated that he would remain in Australia to complete his postgraduate studies. For the other student he was leaving Australia as his student visa had expired. Neither student indicated that they would undertake any further formal studies.

4.4.4.4 *Career and Follow Up*

In terms of career advice or preparation before they came to Australia only one of the two students had done this. The students both named occupations (dietician and nutritionist) relating to the Science field of study (Table 4.4-3). In terms of the suitability of their current course in preparing them for their intended career they responded ‘fairly well’ (1) and ‘reasonably well’ (1). Both students accessed career advice at Canberra. They described the effectiveness of this as ‘excellent’ (1) and ‘needs improving’ (1). With regard to their availability for follow up and an interview, both declined this opportunity.

Table 4.4-3 Intended Career - Canberra

Careers Grouped	Career	Number
Science	Dietician	1
	Nutritionist	1
n =		2

4.4.5 **UNIVERSITY OF TASMANIA**

4.4.5.1 *Questionnaire Sample*

The University of Tasmania students (31) represent 28.2 percent of the international fee-paying students in the questionnaire sample. Of the questionnaire sample cases 47 to 77 were completed by Tasmanian students.

4.4.5.2 *Population Characteristics*

The Tasmanian sample consisted of twenty males and eleven females (64.5 and 35.5 % respectively). The gender ratio was slightly more male compared to the mean for other institutions. The sample had by far the greatest number of Malaysian students (13) in the whole sample. Other nationalities represented were Thailand four, Singapore three, the PRC, Chile, and Vietnam two, and one each from Hong Kong, the Czech Republic, Sri Lanka, the UK, and the USA.

Of the sample 23 (74.2%) were studying courses as undergraduates and 8 were postgraduates (25.8%). This showed a higher proportion of undergraduates to postgraduates compared to the other universities (excluding Canberra) in the survey. A higher proportion of the Tasmanian sample placed themselves in the intermediate category for their level of English language compared to the total sample. The responses were 'advanced' 7, 'good' 6, 'intermediate' 16, and 'needs improving' 2.

4.4.5.3 *Educational Background*

The previous courses studied by the students were; Grade 11/12 (5), VET (6), undergraduate (12), Foundation Studies (4) and other (4). The students recording 'other' were questionnaire cases 61, 65, 68 and 77. Their courses of study had been: a Bachelor of Arts, Unified Examination Certificate (Malaysia), Masters of Engineering and a Graduate Diploma respectively.

A higher proportion of the Tasmanian sample members had studied their previous course overseas compared to the total sample. Of the Tasmanian sample, 24 had studied their previous course overseas and seven in Australia. Of the 24 students who had studied their previous course overseas three had been completing an Australian qualification and as such had been participating in a twinning course. These three students represented 27.3 percent of the total questionnaire sample who had been participating in such programs before they had arrived in Australia for their current course. The three students were studying a Bachelor of Engineering (2), and an 'other' qualification was recorded by Case 67 (Bachelor of Management). All three students participated in full time programs although one studied by distance education and the other two in on-campus programs. The three rated their success in the course as 'good' (two) and 'satisfactory' (one). All three were evenly split in their response as to what their main concern had been in transferring from their offshore program to their program in Australia. There was one

response each for concern with English language, study methods and teaching styles. In response to the question 'how have you found the course work in Australia' one student described it as difficult and two about the same.

The remaining twenty eight students responded to the question 'did their previous course involve units of Science and /or Engineering'. The 'yes' response to this question was 23 and 'no' 5. It appears that five students are now studying in a different field of study compared to their previous course. Of the 23 who said yes the qualifications they had previously studied were Bachelor of Science 5, Bachelor of Engineering 9 and other 9. Those students who stated other were cases 47, 53, 55, 60, 62, 66, 69, 77 and in one case detail was missing. Their qualifications were: Diploma of Information Technology; 'credit for all subjects'; Tasmanian Certification of Education; Foundation Studies; Advanced Diploma of Mechanical Engineering; Diploma of Information Technology; UEC (Malaysia); and a Graduate Diploma of Computing respectively. Of the twenty three students, twenty one studied their previous course full time and two part time. In terms of the mode of delivery one studied by distance and the remaining twenty two on campus. Twenty two students described their results as; 'excellent' 7, 'good' 10, 'satisfactory' 4 and 'unsatisfactory' 1.

4.4.5.4 Current Educational Studies

Of the Tasmanian sample seven students were postgraduates, 23 undergraduates and one 'other'. The 'other' was Case 74 who was studying a Masters of Applied Science. The proportion of undergraduates was the highest of Curtin, Monash and Tasmanian samples. Eighteen of the Tasmanian total sample commenced their current course in 2003, 11 in 2002 and 2 in 2001, a pattern that was consistent with the mean for the total sample. All individuals in the Tasmanian sample were studying units in Science and / or Engineering.

A larger proportion of the Tasmanian sample responded that they understood the term credit-transfer (19 or 61.3 % responded yes to this question) compared to a mean for the total sample of 51.8 percent. The most common source of knowledge about credit-transfer was from 'course advisors' with 8 responses recorded. Other sources were 'agents' 5, 'teachers' 4 and 2 students recorded 'other'. The students who recorded 'other' were Cases 52 and 74. The specific comments made by these students were "Australlearn" (a non profit organisation assisting students to study abroad) (Case 52) and "no one advised me" (Case 74). The proportion attributing their source to a course advisor was higher than for the mean for the total sample.

The proportion of students in the Tasmanian sample participating in an introductory academic program was less than that for the sample as a whole. The percentage who said yes to participation in such programs at Tasmania was 25.8 compare to the mean of 39.8. Despite the fact that only eight students participated in such programs, nine commented on their usefulness. Of the nine responses the ratings given were 'excellent' 1, 'good' 2, 'satisfactory' 4, and 'needs improvement' 2. A wide variation in the range of responses is noted. The aggregation of 'excellent' and 'good' responses was 33.3 percent compared to the mean for all institutions of 48.5 percent.

The ratings for the quality of teaching in the current course was; 'excellent' 1, 'good' 11, 'satisfactory' 12, 'needs improvement' 6 and 'unsatisfactory' 1. These ratings were similar to those recorded for other institutions. The Tasmanian sample recorded their satisfaction with the institution as being 'excellent' 2, 'good' 11, 'satisfactory' 8, 'needs improving' 9 and 'unsatisfactory' 1. The proportion recording 'needs improvement' and 'unsatisfied' is higher than that for the other institutions in the sample. The anticipated final result would appear to be similar to the mean of all institutions in the questionnaire sample. The

results recorded were 'excellent' 2, 'good' 14, 'satisfactory' 11, and 'needs improving' 4.

It would appear that the Tasmanian sample was more likely to have investigated whether their course was recognised by a professional body or society in their home country. The response 'yes' was given by 26 students (83.9%) compared to the mean for the total sample (53.7 %). The source of researching the recognition of their course was given by 25 students. Of the responses 'contacting home authorities' was the most common with 13 responses, followed by the Australian Education Centre 10 and 'other' 2. Cases 61 and 77 gave 'other' as a response. For case 61 this meant "not sure" and for Case 77 "no idea". The Tasmanian sample had the highest participation in societies or clubs in relation to their course of all institutions. Of the 19 responses 'societies and clubs' had 16 responses, 'competitions' 2, 'conferences' 1, 'work experience' 6 and 'leadership positions' 3. Multiple responses were possible for this question (question 29).

4.4.5.5 *Future Educational Studies*

Of the 30 respondents who answered this question 18 (60 %) indicated that they intended remaining in Australia. This was very similar to the mean for all institutions of 58.3 percent. For the 12 not remaining the reasons given were 'returning home for employment or business reasons', (7) and 'student visa expired' (5). For those remaining the study plans were pursuing postgraduate studies (15), undergraduate studies (2) and 'other' (1). The one 'other', Case 69 indicated that he wanted to pursue work experience. The proportion of the Tasmanian sample wishing to pursue postgraduate studies was much higher than in comparison to the mean for the total sample (83.3 % compared to 60.3 %). The proportion wishing to pursue undergraduate studies was low in comparison to other universities in the study. This was understandable given that the Tasmanian sample had a higher proportion of undergraduates doing current courses. Of the 29 responses to the question

'will you add to your Australian qualification by undertaking further formal qualifications', 17 said 'yes' and 12 'no'. The proportion giving an affirmative response from Tasmania was lower than that for the total sample (58.6 % compared to the mean of 67.3 %).

4.4.5.6 *Career*

From the sample 29 students responded to the question of whether they had accessed career advice or counselling in their home country. Of the respondents, 34.5 percent said yes to accessing such advice. This rate of response was slightly higher than the mean for the total sample of 27.2 percent.

Table 4.4-4 indicates the range of careers that the Tasmanian sample was intending to pursue. The largest proportion of the occupations related to IT careers (9), followed by science occupations (7), engineering occupations (6), and other/ungrouped occupations also (6). The sample members responded that they believed their current courses matched their intended careers slightly better than that for the mean of the total sample. The results recorded the match between current course and intended career were; 'very well' (2), 'fairly well' (16), 'reasonably well' (11), or 6.9, 55.2, and 37.9 percent respectively compared to the mean for the total sample of 16.8, 38.3, 39.3 and 5.6 percent.

Of the Tasmanian sample 23 students (74.2 %) responded that they accessed career advice in their current institution. This response was considerably better than the mean for the other major university samples of Curtin and Monash. In terms of how they viewed the effectiveness of this advice the 23 students responded good 8, satisfactory 8, needs improving 6 and unsatisfactory 1. These results were similar to that for the total sample. The percentages were 34.8 good, 34.8 satisfactory, 26.1 needs improving and unsatisfactory 4.3 compared to the means for the total sample of 6.3 excellent, 34.9 good, 38.1 satisfactory, 17.5 needs improving and 3.2 unsatisfactory.

Table 4.4-4 Intended Career - Tasmania

Careers Grouped	Career	Number
Engineer	Civil engineer	1
	Engineer	2
	Mechanical engineer	1
	Power engineer	2
Information	Computer security	1
	Business technology	1
	IT/computing	2
	Manager in computing	2
	Software/computer systems engineer	3
Science	Chemist	2
	Environmental consultant	1
	Marine science	1
	Scientist	2
	Zoologist	1
Other/ungrouped	Architect	1
	Car company	1
	Establish own company	1
	Lecturer/teacher	1
	Researcher	2
Not sure/ unknown		3
n =		31

4.4.5.7 *Interview Sample*

From the sample of 31 students, 20 indicated their willingness to participate in further follow up conversations or interviews. As a consequence, 12 students (8 males and 4 females) were interviewed. Most were interviewed in person but one elected to participate by written submission and for two other students the interview was conducted by telephone. The students concerned were questionnaire cases 69, 56, 77, 57, 48, 74, 54, 73, 72, 65, 52 and 67 (interview Cases 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 17 and 18).

The majority of the interview sample came from Malaysia (7), the remainder coming from the UK (1), Vietnam (1), Sri Lanka (1), the Czech Republic (1), and the USA (1). The age range involved was 24 years plus (3), 21-23 years (5) and 19-20 years (4). The field of study representation was Computing (2), Engineering (6) and Science (4). Only three students in this sample were postgraduates with the remaining nine studying as undergraduates. Their English levels were 'advanced' (5), 'good' (4) and 'intermediate' (3). At high school the majority had studied at government schools (9).

Of the interview sample, eight had received careers advice at high school. This advice took the form of: course counselling (3); further study information (2); discussion of strengths and weaknesses (1); visits from prospective employers (1); and study abroad information (1). The main reasons for undertaking the current course were: interest in the subject field (7); family members did the same course (2); friend had done the same course (2); two also referred to possible employment outcomes. The intended careers related to Engineering (6), Science (4), and Computing (2).

For interview Case 7 his interest with mechanical things combined with parental expectations appeared to have shaped his future career direction.

Interviewee: "Ah...it was mainly about my all O levels of Physics and Maths I was very good at those subjects. I am interested in cars and something like that.

Greg: So it was because the subjects you are doing here and interest in cars.

Interviewee: And mechanical stuff.

Greg: And mechanical things, so those two things. Can you remember any person who might have bearing on you going overseas?

Interviewee: Ah... my parents always expect me to go overseas I had three elder sisters who all studied abroad.

Greg: Okay. They expected you going overseas.” **Case 7**

For Case 2 the previous decisions by siblings lead to an expectation that he would follow the same career path.

Greg: “Ok, perhaps when did you think you might want to go into Engineering, was that a decision you made in school, or was that a decision you made after you worked out which university you wanted to go to?

Interviewee: ...before when I am in high school.

Greg: When you were in high school.

Interviewee: Because family members ...like...having my cousins are engineers and my brothers study...

Greg: Oh, okay, so your brothers studied Engineering and your cousins studied Engineering.

Interviewee: Yeah.” **Case 2**

For Case 17 she claims her mind was made up about her career direction at age 12 years.

Interviewee: “...I decided probably at 12 ... I knew from a young age

Greg: Oh, okay.

Interviewee: But...I really enjoy Science and Science projects and...then being in the arts and humanity throughout high school, I still...ah... want to have a go at it, I think I can do it, but I am really interested in marine science despite not living near the water.

Greg: Okay. So you sort of enjoy it and you were good at Science.” **Case 17**

Seven of the students had accessed careers advice at the University of Tasmania. This took the form of ‘employer visits/talks’ (4), ‘vacation employment’ (1), finding out about approaches to ‘find a job’ (1) and using ‘website resources’ (1). Of the group of twelve students five were interested in gaining permanent residence to Australia.

Case 12 above (see Section 4.3.2.12) referred to formulating her plans to study overseas in high school. Case 7 described the encouragement he received at school from his teachers:

Interviewee: “...you can say even from primary school time you kids are probably going to go overseas studying by secondary school. There will be emphasising something like that. If you have a chance to go overseas study they encouraging us to study abroad.” **Case 7**

4.4.6 TAFE TASMANIA

4.4.6.1 Questionnaire Sample

The TAFE Tasmania students represent 1.8 percent of the international-fee-paying students in the questionnaire sample. Of the questionnaire sample Cases 109 and 110 were completed by TAFE students.

4.4.6.2 Population Characteristics and Educational Background

The two TAFE students were males, one from Japan and the other from Taiwan and they were studying in the VET sector. They described their English level as ‘intermediate’ and ‘needs improving’ respectively. They both had studied their previous course in Australia in the VET sector and these courses had included units relating to Science and /or Engineering. For questionnaire cases 109 and 110 the course previously completed had been a Certificate III in Information Technology. They had studied these qualifications as full time studies, in an on-campus mode. The results were described alternatively as ‘excellent’ and ‘good’.

4.4.6.3 *Current Educational Studies and Future Educational Studies*

The two students commenced their current courses in 2003 and both studied courses relating to the Science and /or Engineering field. Neither student understood the term 'credit-transfer'. One of the students had participated in an introductory academic program which he suggested 'needed improving'. The students rated the quality of the teaching of the course as 'good' and 'needs improving' respectively, and the satisfaction level with the institution was rated alternatively as 'excellent' and 'needs improving'. The students predicted that their final results would be 'excellent' and 'needs improving'. Only one student had investigated the professional recognition of his course with professional bodies in his home country but his source of information was not specified. One of the two students participated in an activity relating to his course: a 'competition'.

4.4.6.4 *Career and Follow up*

In response to the question whether they would remain in Australia for future educational studies (question 30) one student answered 'yes' and one 'no'. For the student who answered 'no' (Case 109), the reason given was that there was 'too much stress'. The remaining student intended to pursue undergraduate studies. Neither student had had career advice before they came to Australia. For intended career one student said "no idea" while the other student did not give a response (this student was subsequently interviewed). The responses to the link between their current course and intended careers resulted in the responses 'fairly well' and 'not at all well'. Both students had accessed careers advice in their current institution which they described as being 'good' and 'satisfactory'.

4.4.6.5 *Interview Sample*

Only one of the two students agreed to a follow-up interview (questionnaire Case 110, interview Case 21). By the time he was

interviewed he had completed a Diploma in IT Network Engineering at TAFE Tasmania and enrolled as an undergraduate at the Queensland University of Technology. At the time of completing the questionnaire he did not specify an intended career. By the time of the interview he responded about his intended career with the following comments:

Interviewee: “I am really not sure now, because after I finish...finish my degree...

Greg: Yeah.

Interviewee: And I will study another degree or find a job.

Greg: Okay, but it obviously would be something related to IT?

Interviewee: Yeah.

Greg: So your current degree, what’s that called? Is it a Bachelor of Information Systems?

Interviewee: Bachelor of Software Programming.

Greg: Bachelor of Software Programming.” **Case 21**

Even though at the time of completing the questionnaire he acknowledged that he did not know about credit-transfer as a consequence of enrolling at QUT he gained substantial credit for his previous TAFE qualifications. He also makes comparisons between his studies in Taiwan, Tasmania and Queensland and also on the TAFE / undergraduate transition.

Interviewee: “One year diploma...and...and...one year and a half year for certificate.

Greg: Oh, okay. So one and a half year certificate and followed by one year diploma. So what does that mean in terms of time that saves of your degree? Did they give you one year of your degree?

Interviewee: Yeah, one year.

Greg: Yeah, okay then. So you know all about credit-transfer then?

Interviewee: Yeah, I know.

Greg: Okay. ...Case 21, how have you found the difference between going to school in Taiwan and the way...the course was conducted at TAFE in Tasmania, or the course at QUT? Has that been a problem for you?

Interviewee: No

Greg: ...in terms of just getting used to the course...was it...is it quite different the way the course is conducted in Tasmania, compared to back to in Taiwan?

Interviewee: I mean...I think the diploma is practical but...in Taiwan is more exams...theoretical.

Greg: Yeah, so the diploma was more practical...

Interviewee: Yeah.

Greg: And in Taiwan it is more theoretical. What about the course now you are doing at QUT?

Interviewee: I think it is harder. ...

Greg: Okay. And...but is it theoretical or a bit more like what you were used to in Taiwan?

Interviewee: Like Taiwan I think...a bit more like...

Greg: Yeah. So this year, do you regard this year as your second year of your degree?

Interviewee: Um...

Greg: Because of credit-transfer?

Interviewee: Yes." **Case 21**

4.4.7 SOUTH AUSTRALIAN SCHOOLS

4.4.7.1 *Questionnaire Sample*

The South Australian government school sample represented 21.8 percent of the total sample and was drawn from four schools and included questionnaire Cases 23 to 46.

4.4.7.2 *Population Characteristics*

Of the 24 members of the sample, the majority were females (Table 4.4-5), while the majority of the sample was in the 19-20 age group (13 respondents). Most of the sample was from the People's Republic of China (21 of the 24), accounting for the nationality of the students from Adelaide High, Banksia Park High and Charles Campbell Secondary Schools. The remaining countries represented were Hong Kong SAR (2) and Japan (1) and these students were studying at Glenunga International High School.

Table 4.4-5 Gender - South Australian Schools

School	Males	Females	Total
Adelaide High School	2	1	3
Banksia Park High School	2	4	6
Charles Campbell Secondary School	-	1	1
Glenunga International High School	7	7	14
Total	11	13	24

The English language level of this sample varied considerably as the minimum level necessary to gain a student visa is less than that for other sectors. The majority of the sample rated themselves as 'intermediate' (11), 'needs improving' (9) and 'good' (4).

4.4.7.3 *Educational Background*

The majority of the students had previously completed Grade 11/12 accounting for 21 of the students including all those at Adelaide and

Glenunga Highs. Two students at Banksia Park and Charles Campbell had previously finished Grade 10. Of these students, eleven had completed their most recent course overseas and thirteen in Australia. Three students indicated that their most recent course was part of a twinning arrangement with one gaining an Australian qualification. The three students obtained a High School Certificate, School Certificate and Year 11. All three studied full time, two on-campus and one in a distance education mode. The three students rated their success in this course as 'excellent' (1), 'good' (1), and 'satisfactory' (1). All these students indicated English as their 'greatest concern' when they transferred from their offshore to onshore program, saying that they found the course work 'about the same' in moving from their offshore to onshore program.

Question 12 asked students to confirm whether they had undertaken units in Science and /or Engineering. For the South Australian school students this appears to have been interpreted in a number of ways. Of the sample of twenty four students, twenty one responded. Of these, six answered 'yes' and fifteen 'no'. For the six students, two identified with a Science background and one Engineering in question 13a. The remaining three students responded 'other' or in two of these cases (33 and 37) the students referred to having studied Physics. All six students responded that they had studied as full time students, with five of them doing this in an on-campus mode and one by distance education. Three students described their results as 'excellent' and three as 'good'.

4.4.7.4 *Current Educational Studies*

All twenty four students in the sample indicated that they were studying grade 11/12. The year of commencing these studies varied from 2001 through to 2003. Over half the sample (54 %) indicated that they had commenced their course in 2003, 29 percent in 2002 and the balance in 2001. The same pattern was evident across all four schools.

Question 17, where the student was asked to give the qualification they hoped to achieve at the conclusion of their current studies, was interpreted in two different ways. Eleven students variously described the current school qualification they were studying namely SACE, SSABSA, International Baccalaureate (IB), and Certificate. The remainder projected themselves beyond their current qualification and gave the tertiary qualification they were heading towards (Degree, BSc, and Biomedical Science). For question 18, 62.5 percent of the sample identified with undertaking units in Science and /or Engineering. The response to whether the students understood the term credit-transfer was considerably lower than the mean for the total sample (33.3 % compared to the mean of 51.8 %). This was understandable given that the students had for the most part just commenced their entry into the Australian education and training system. All Adelaide High (3) and some of the Glenunga (4) and Banksia Park (1) students understood the term. For the eight students who said that they understood the term credit-transfer the main source of knowledge was their teacher (3) and course advisor (2).

A higher proportion of the SA school sample attended introductory academic programs than the mean of the total sample (47.8 % compared to 39.8 %). Eleven of twenty three respondents attended such programs. Of the twelve students who responded 'no', the comment from one 'confident of my course' was indicative of the reasons given for not attending such programs. Despite only eleven responses indicating attendance at such programs, there were thirteen ratings on their usefulness. Of these ratings introductory academic programs were seen as valuable with the students variously rating them as 'excellent' (2), 'good' (7), 'satisfactory' (3) and 'needs improving' (1). The majority of Glenunga students rated these programs as 'good' with five out of eight responding as such.

The majority of students rated the teaching in their current course as 'excellent' (5) or 'good' (12). This response level of 73.9 percent was

considerably higher than the aggregate mean of 48.7 percent for these ratings from the total sample. The responses across schools varied with all three Adelaide High students recording 'good' ratings, the majority of Banksia Park 'satisfactory' ratings (3 of 5 responses) and Glenunga (3 'excellent' and 8 'good' responses). Satisfaction with the current institution was also high, with 69.6 percent of respondents recording excellent or good ratings compared to 51.3 percent for the total sample. Again there were variations across schools with the Adelaide sample of three all recording 'good', Banksia Park 'excellent' (1) and 'satisfactory' (4), Charles Campbell 'excellent' (1) and Glenunga, 'excellent' (4) and 'good' (7). Data was missing in one case for the rating of teaching and institutions.

In ranking the most important aspect to SA students, teachers/lecturers were ranked first or most important (58.3%), assistance in English second (20.8%), relevance of course materials and facilities were ranked equal third (16.7% each), and relevance of course materials fourth (20.8%). Anticipated final results for 'satisfactory or better' rated 87 percent, or almost the same as the mean for the total sample of 86.2 percent. There were a slightly higher proportion of excellent ratings compared to the mean. The proportion of students researching the recognition of their course with a professional body was considerably less than that for the mean of the total sample (20.8% compared to 53.7%). This was probably because they were still completing a school level qualification and as such were not undertaking a specialist qualification which would require this type of inquiry. Across schools, responses varied with 40 percent of those at Banksia Park responding 'yes' while 92.9 percent at Glenunga said 'no'. For those students who had responded 'yes' from the SA schools sample, the majority had researched recognition with home country authorities. This was also the most common source of information for the whole sample. For participation in course related activities the most frequent responses were competitions (40%) and work experience (33.3%). Competitions were

the most frequent response from students at Adelaide High and Glenunga International High.

4.4.7.5 *Future Educational Studies*

All students from SA schools indicated that they intended to remain in Australia for further study. In terms of their intended study plans four students indicated that they intended to undertake postgraduate studies, seventeen undergraduate studies, one Grade 11/12 and one 'other'. The other (Case 30) referred to undertaking studies to "whatever I can do". Of the eighteen students who indicated the proposed qualification, the more frequent responses were engineering (2), PhD (2), and hotel management (2).

4.4.7.6 *Career*

Twenty two students responded on whether they had had career advice in their home country. Of these, only four or 18.2 percent responded 'yes'. This was lower than the mean of the total sample of 27.2 percent. The pattern varied across schools with Banksia Parks reporting a slightly higher proportion of students who had accessed careers advice in their own country. The intended careers of the school students were perhaps more diverse than other sector however this is to be expected from students who might still have a considerable period of time before completing their education and training. The most frequent responses were "business" (3) and "researcher" (2) as indicated in Table 4.4-6. In response to how well the students thought their course prepared them for their intended career 6 responded 'very well', 8 'fairly well', 7 'reasonably well', and 2 'not at all well'. More of the Glenunga International High students seem to feel that their course prepared them well.

Table 4.4-6 Intended Careers - South Australian Schools

Careers Grouped	Career	Number
Engineer	Civil engineer	1
	Engineer	1
Information Technology	Communications	1
Science	Aged care /nursing	1
	Biological engineer	1
	Chemical scientist	1
	Doctor	1
	Psychologist	1
Other/ungrouped	Business	3
	Hospital	1
	Manager	1
	Marketing	1
	Performer	1
	Researcher	2
Not sure		1
Cases missing		6
n =		24

Of twenty three students who responded, 60.9 percent indicated that they were accessing career advice in their current institution. The proportion of students doing this at Banksia Park, was highest followed by Glenunga. Fifty percent of the fourteen students who responded rated the effectiveness of the careers advice in their current institution as ‘excellent’ or ‘good’.

4.4.7.7 *Interview Sample*

For SA schools, thirteen of the students indicated their willingness to be contact for interview. Subsequently one student was interviewed (interview Case 14, questionnaire Case 37 from Glenunga International High School). Interviewee 14 was female, aged 19-20 years and from the

PRC. At the time of completing the questionnaire she was enrolled in Grade 12, by the time the interview was conducted she had progressed onto the first year of a combined degree and was studying in Semester 2.

Interviewee 14 was clear about her intended university course but not clear about a possible career outcome.

Greg: “Can you tell me why you have changed your mind?”

Interviewee: Yeah, because I said that...I thought was going to do that, then I realised that I didn’t have the ability like some...the ability to do marketing or international business, and I found that commerce course is too broad for me.

Greg: [Yes].

Interviewee: I want to learn something more specific knowledge that you can build up your skills.” **Case 14**

Whilst her degree was a combined one involving Finance, Mathematics and Computer Science it was broad enough to allow for a number of career directions to occur.

Interviewee: “Also employment, I think...because I got time... I am not sure what should I do after university...I think probably a few months I will know...lead me to anywhere.” **Case 14**

4.5 SUMMARY

The demographic background of the questionnaire and interview samples was compared to the total population of international fee-paying students for gender and age distribution. The variables of the major source countries for international fee-paying students in Australia, the distribution of international fee-paying student enrolments across

Australia, sector characteristics of data and the broad fields of study were compared between the questionnaire and interview samples. Equity targets for the Sciences are less likely to be met because of the size of the international fee-paying student enrolment in this broad subject field and its bias towards males. The same gender pattern is heavily weighted towards male enrolments in Engineering and IT courses.

Offshore activity for international education is becoming increasingly significant. For those students enrolled, transferring from offshore to onshore programs, English language stood out as a concern in the questionnaire sample. A significant proportion of the questionnaire sample commenced their course in the year of the survey, 2003.

Fifty-two percent of the questionnaire sample was able to explain the term credit-transfer, a key term relating to understanding the nature of the Australian education and training system. There were differences in the response rate on an institution basis. Knowledge about credit-transfer was higher amongst students from Monash University. This may have been because this group of students consisted of a higher proportion of postgraduate students and yet interestingly undergraduates as a group had greater knowledge of credit-transfer than schools or postgraduate students.

A minority of the questionnaire sample had undertaken introductory academic programs. There was an important difference between sectors with participation in these programs being much higher amongst the non school population.

Fifty-three percent of the questionnaire sample had researched whether their course was recognised by a professional body in their home country. For this result there was a wide variation in sector responses. A much higher proportion of the non-school population had looked at this issue compared to the school population. Males were more likely to have

researched recognition of their courses than females. University of Tasmanian students were more likely to have researched professional recognition. There was a relatively high level of participation by the questionnaire sample in extra-curricula activities.

Of those completing the questionnaire 57 percent indicated that they would be remaining in Australia to continue their studies. More of these students were likely to be males than females. Many of these students (36%) indicated that their future study plans involved postgraduate studies.

The most significant statistic relating to the questionnaire sample was that 68.2 percent of the sample indicated that they did not have career preparation or advice before embarking on their studies in Australia. Males were more likely to have participated in career preparation. There were major differences between the non school and school population. A higher proportion of undergraduates in comparison to schools or postgraduate students had accessed this advice.

Despite this, respondents indicated a diverse range of possible future careers (44 types were cited). The most common intended career named was that of engineer. The match between intended career and current course was described as being 'very well', 'fairly well' or 'reasonably well' by 92.3 percent of the questionnaire sample. All six individuals interviewed in the Monash sample had had careers advice at high school. Even with this background two of them had changed their career direction between completing the questionnaire and being interviewed approximately ten months later.

Career advice was accessed by 58 percent of the sample in their current institution. A higher proportion of the schools population compared to the non schools population undertook this advice. Males were more

likely to have accessed this information. The nature of this career advice needed improving, according to 21 percent of those accessing it.

From the interviews the major issues identified were: the type and nature of career advice received by international fee-paying students when at high school; factors responsible for students travelling overseas for educational studies; the use of studies to gain a professional qualification before becoming established in business; an interest by some students to migrate to Australia; and the career paths that students use to navigate between levels or types of educational experiences.

For some students career education and preparation for studies overseas were interchangeable. A high proportion of international students did not have career advice or preparation before coming to Australia and this has lead some of those interviewed to study by 'trial and error'. There appears to be a definite link between studying in Australia and aspiring to gain permanent residence, especially with undertaking some higher degrees.

A number of students indicated through the interviews that they were studying to gain a professional qualification before engaging in business. There may need to be a greater recognition that this aspect is more likely for an international student population by incorporating some business units in their course. For students studying in twinning programs there may need to be greater clarity where certification is provided for the offshore part of their program to explain its purpose. The use of practical or experiential learning can be beneficial to learning. However, the organisation of a practicum back in a students' home country appeared to be an area of concern for some students.

Other issues raised by students were: the nature of internships in their course; how they adjusted to Australian conditions and teaching methodology, comparative comment about their home country's

education and training system with that found in Australia; and the cost of studies in Australia as a destination, compared to the USA or UK.

Chapter 5 considers the data in terms of sectors and gender respectively. The Chapter examines the literature on the career provision and support of students especially in an Asian context, the transference of career models between western and eastern societies (Leong, 2002) and factors impacting on career decision making (Wei-Cheng, 2003). There is a brief discussion of the data from the questionnaires and interviews in the light of the literature on non traditional occupational roles as it applies to international fee-paying students.

Chapter 5

INTERPRETATION OF RESULTS

5.1 INTRODUCTION

This chapter discusses the results from the questionnaire together with comments from students from the interviews on an institution by institution basis. Additional feedback on the results was obtained from the individuals in institutions (a listing of the people consulted in each institution is included in Appendix 11), and this comment is included in the discussion. The results are then considered on a sectoral basis for any patterns pertaining to each of the sectors of education and training. In discussing the results, a short background summary of the career provision of each of the institutions (relevant to international students), is included to facilitate a better understanding of the import of the student's comments.

The results are also examined for any pertinent sectoral patterns (higher education, VET and schools). There are a wide variety of models of career provision used by the nine institutions in delivering career provision to international students. With regard to the discussion on the higher education sectors, comments are made in relation to a number of course guides used by students to assist them select institutions and courses. There is a consideration of how varying cultural perspectives impact on the students' understanding of career education, and information about the educational reform process in a number of Asian countries is included in order to better understand the career education backgrounds that might be familiar to international students. The factors influencing a students' decision-making with respect to careers and course selection are discussed along with gender patterns and traditional and non-traditional course enrolment and employment outcomes, especially in relation to Science and/or Engineering course selection.

5.2 INSTITUTIONS

5.2.1 CURTIN UNIVERSITY OF TECHNOLOGY – CAREER MODEL

The model of career provision for international students for Curtin reflects the breadth of the total enrolment. About 23 percent of students are international fee-paying students. Curtin University of Technology has a devolved delivery system for the provision of student services. Curtin has a number of campuses including several offshore with the main campus at Bentley in Perth.

An internal review (unpublished) of career support for students was conducted in 2004. It described Curtin as having a minimalist model with one career co-ordinator working with Divisions to conduct programs for students. It was recognised that some Divisions had very good employer links. No special provision was provided for international students although these students were identified as having needs that should be addressed.

Curtin participates in the GCCA Graduate Destination Surveys (the methodology of this survey will be discussed later). The survey Curtin University of Technology (2003) focussed on the graduate employment outcomes of students. Whilst data is included on the employment outcomes of the Division of Engineering, Science and Computing, no specific data is recorded on the employment outcomes of international students. For the employment outcomes recorded, these are categorised by course and also indicate job titles and employer. This data distinguishes between a full time and part time employment status.

In 2003 (at the time the questionnaire was administered) International Services included a number of international advisors. Some of the issues they dealt with concerned students enrolled in the ‘wrong’ course. This area moved to Student One (the central student support area) in August 2004 from the International Office, and the international student advisors

are now mainstreamed in the support service available to all students. This provision is currently in transition and new arrangements are being trialled. Separate to this a 'returning home program' is offered to international students sited in Curtinhub (a centre with a range of support services for students). This program includes preparing resumes and interview skills, and is conducted in a workshop format for students about to return to their home country.

Also operating in the Curtinhub is the Curtin Advantage program. The program operates in the form of a company with the employees being recruited from among the student body. The program provides students with a simulated working environment. Curtin provides 66 percent of the funding with the balance from industry. The program participants are mentored by a Chamber of Commerce and its members. From July 2005 the program is due to expand to the University of Western Australia (as part of co-operative higher education program).

The Curtin Advantage program conducts a pre-assessment of students' employability skills and generic skills, and draws on a co-operative experiential learner model. Industry uses the program as a recruitment ground, and, of the students participating in the program, 40 percent are international fee-paying (mainly IT). The program is currently targeting offshore employers to meet the needs of international students who are seen as being at risk in terms of gaining employment. The program has two staff and currently makes contact with 1,600 of approximate 33,000 students enrolled. The attributes of the traditional careers model are seen as having limitations in serving a diverse student population across multi-campus sites. The Curtin Advantage program is considered to be as the 'cornerstone' to developing an alternative model.

5.2.2 OBSERVATIONS ON RESULTS

Given the higher number of the Curtin sample members having completed VET qualifications (10 from 29 respondents) it was felt that

the percentage understanding the term *credit-transfer* (51.7%) would have been much higher. The percentage of students assigned to the VET sector may have been unduly influenced by the twinning arrangements with the Singapore polytechnics institutes. For polytechnic graduates from Singapore, RPL is usually given. The feedback on the results from Curtin was that these students should not be equated with the VET sector. For the recognition of the course by a professional body / society in the students' home country, the Curtin sample response was slightly better than for the mean of the total sample. No reason was offered by Curtin staff to explain this. In part, the reason may be the proportion of students undertaking engineering who sought clarification on the recognition of their course.

Curtin had the highest participation rate in conferences linked to courses. Support is given by Divisions to postgraduate students and it can be assumed that the sample included postgraduate students who had received such support. The linkage between intended careers and field of study of the sample appeared to be clearer than for some other institutions. In the discussions with Curtin academic staff about the results of the questionnaire, the issue of how to gauge career advice and the difficulty of the interpretation of definition of career advice was raised. This concern had previously been identified as an issue with interpreting the questionnaire results and it was anticipated that the interviewing of twenty percent of the sample would provide the opportunity to clarify the understandings of what was meant in the study, by career advice.

The Curtin sample members had the least access to careers advice of any students at their current institution. An internal review was conducted by Curtin administration in 2004 on career provision and a new strategic direction is being developed to address concerns. Some changes have already occurred in the light of that report (as outlined above).

The articulation arrangements for Curtin are published on the web and are freely available to students. An additional point in sharing the results with Curtin academic staff was that for student load “only about 20 percent of higher education students’ finish in the minimum time period”.

5.2.3 MONASH UNIVERSITY – CAREER MODEL

The Monash provision relies on both a web resource <http://www.careers.monash.edu.au/> and personnel at the Monash University Careers and Employment offices at each of its Clayton, Caulfield, Peninsula, Gippsland and Berwick campuses. Twelve staff members are located at the Clayton and Caulfield campuses. Information is made available as part of the orientation week to both local and international students alike on career planning, volunteerism, clubs and societies and casual job information. Additional student support (apart from the Careers and Employment office) at Monash includes psychologists / counsellors who are available to all students and focus on issues relating to making adjustments to living in Australia and assisting students make application for special consideration if there are course difficulties. Other avenues for support are available from Student Affairs and Assistance, Monash Alumni, Language and Learning, and the various faculties. Separate to the general counselling positions are five careers counsellors. The questionnaire was circulated at the largest campus, Clayton.

The main focus of careers counsellors activities involve offering job seeking workshops to students and talking to employers about prospective positions. A career counselling position exists to serve the particular issues of international students.

The objective of the Monash University Careers & Employment team is to value-add to the international students' Monash experience by encouraging them to seize the opportunity of enriching their overseas experience whilst studying in Australia. This could come in the form of involvement or participation in clubs and societies, volunteer

or casual / part-time work and attending workshops such as teamwork, leadership, communication (to name a few), in order to improve their employability skills. At the end, what's important for the international Monash graduate, regardless of whether they decide to live in Australia, travel overseas or return to their homeland, would be that they have not only gained their well-deserved degree(s) and a wealth of cross-cultural exchanges and work experiences but that they are also job ready and highly employable (Lim, 2005).

Until quite recently the organisation arrangements of the area involving international students (Monash International) was a separate entity from the remainder of the university at Monash. It is currently being re-incorporated back into the university.

5.2.4 OBSERVATIONS ON RESULTS

The sample of students from Monash was more postgraduate in nature than that from the other universities in the total sample. Given the distribution of the questionnaire electronically I was interested to find out if there were any reasons why postgraduates responded more readily compared to other types of students. The advice received from Monash staff was that the response rate may have had more to do with the time of the year the questionnaire was distributed. The undergraduate and postgraduate distinction may have been because undergraduates were more focussed on preparing final assignments and preparing for examinations.

The credit-transfer source of information of Australian institutions was higher for the Monash sample than all other institutions included in the sample. Was there an aspect of the orientation program for students that might account for this? Monash staff felt that this was not so much a product of the orientation program but rather the support of Monash agents' overseas, faculty staff travelling overseas and discussing related issues with prospective students, and information being available on open days in the students' home country.

The participation in introductory orientation programs was lower than for comparable institutions in the study. This may have related to the terminology in the items in the questionnaire and how it was interpreted at Monash. At Monash there is an 'Introductory Academic Program' conducted in January and compulsory for AusAid students but not for international fee-paying students. A separate orientation program is offered for the latter a few days ahead of the commencement of the academic year. Not all such students would attend this program. Commons & Gao (2004, p. 1) have noted in their New Zealand study of international students that:

...students who attended our academic orientation programmes tended to demonstrate more detailed awareness of the main skills required in their new education environment.

A high proportion rated teaching, in relation to their current course, as 'needing improvement' or being 'unsatisfactory' (45% of respondents). Again, given the more postgraduate nature of the sample, this may have related to students' perception of the supervision of their studies. It may have been that the supervision level was variable given the differing nature of relationships between students and the faculty staff member. The recognition of the students' course with a professional body or society in their home country was lower than the mean of the remainder of the sample. It appears that factors relating to recognition might be of greater importance to undergraduates than to postgraduate students. In relation to participation in activities related to courses, societies and clubs was the most frequent response. Participation in societies and clubs for Monash tend to be dominated by undergraduates.

Career advice made available to students in the sample before reaching Australia was 18.2 percent. This was low in comparison with other institutions and below that of Curtin and Tasmania universities. This might be related to the varying source countries of the international students and the nature of career programs in students' home countries.

Accessing career advice at Monash was below the mean for the total sample and the rating of its effectiveness was variable. A position was created in 2005 to specifically address this need in relation to career demands from international students at Monash.

5.2.5 UNIVERSITY OF CANBERRA – CAREER MODEL

The University of Canberra has a Careers Office. In the first instance however an international student is more likely to talk to an international student advisor in the International Office. Issues involving a change of course are likely to involve the course advisor within the Division, and if issues arise in terms of careers, the student is likely to be referred on to the Careers Office by the international student advisor or course advisor.

5.2.6 OBSERVATIONS ON RESULTS

The participation rate in response to the questionnaire was poor, in part because of the offerings from the field of study. The questionnaires were mainly sent to IT students.

Canberra only had a very small Engineering program. For this reason no ratings are given in Table 5.3-4, while Table 5.6-1 records a commencement enrolment of 20 in Engineering and Related Technologies for 2003. Because of the small sample size from Canberra the results have been excluded from some analysis when interpreting the higher education responses.

5.2.7 UNIVERSITY OF TASMANIA – CAREER MODEL

The university funds a Career Development and Employment Service (CDES) within the Student Services section. This service uses a cascade model of delivery with a focus on self service. As part of its rationale it has adopted the OECD recommendation to “give priority to systems that develop career self-management skills and career information” (Tatham, 2005, p. 1). The service directly reaches about a third of the university student enrolment. Provision has also been occurring increasingly at the

universities' Schools level. Here the Career Development and Employment Service give a priority to supporting teaching and other staff where they assist students in developing their career skills.

The CDES acknowledges its limitation with regard to providing services to international students. "Our capacity to provide specialised information on graduate recruitment across the broad range of countries involved is very limited" (Tatham, 2005, p. 5). There is recognition of the significance of international fee-paying students as part of the enrolment, and also the need to research further issues and develop proposals in relation to these students.

5.2.8 OBSERVATIONS ON RESULTS

Twinning programs were raised by three students. The main institutional link relating to the cohort of students in this study is one involving the delivery of Engineering programs (in English and Vietnamese) at Ho Chi Minh City University of Technology. At the end of the second year the students are able to transfer to the University of New South Wales, the University of Melbourne or the University of Tasmania. The majority transfer to the University of Tasmania, some who wish to specialise in chemical engineering usually go to UNSW.

A larger proportion of the Tasmanian sample compared to the total sample stated that they understood the meaning of the term *credit-transfer*. Was there any mechanism that fosters knowledge about this, and if so, does this link with an orientation program given the number of students who attributed their source of knowledge to course advisors? International Office staff pointed to an emphasis in international marketing relating to explaining this term as the reason for this result. In addition the term is consistently used at interview and in correspondence with students.

Participation in introductory academic programs was less than the mean for the total sample. Is there a reason for this? The commencement date of orientation programs is currently being examined with a view to having an earlier start date, mainly to be able to finalise enrolments earlier rather than in orientation week as presently occurs.

The satisfaction level with the current institution appeared to reflect a higher proportion of dissatisfaction compared to other institutions. The response recorded to Question 24 'how would you rate satisfaction with your current institution' was that 32 percent of the sample of 31 rated the institution as 'needs improvement' or as 'unsatisfactory'. This may have occurred because of a loss of accreditation with Singaporean authorities for engineering programs, or as a consequence of concerns expressed by students in arranging their 'professional experience' in engineering courses. Both issues were referred to by students at interview.

There was a high participation in societies and clubs compared to that recorded for other institutions in the sample. The impression from the International Office is that because Hobart and Launceston are smaller cities in comparison to mainland Australian cities, and do not have the attraction of their own Chinatown, students are more likely to generate their own entertainment and this tends to occur through clubs and societies.

Researching the recognition of courses with professional bodies was substantially higher at Tasmania than the other institutions in the sample. In marketing to international fee-paying students, the University of Tasmania insists that students research this issue. General advice is provided in course brochures, but students are strongly advised to follow up this issue too.

Of the comments about the type of careers advice currently accessed by respondents, personal counselling is not recorded as an option in the

responses. Whilst a provision exists from the CDES for this service, for all practical purposes it is limited to a relevantly small number of potential interviewees and a very small proportion of the international student enrolment. With regard to other comments only a few of the international students doing Engineering go onto further study according to the International Office. Course work Masters in Engineering does not exist. There is recognition that some form of course with a business component is needed.

5.2.9 TAFE TASMANIA – CAREER MODEL

Career and course counselling is provided at TAFE Tasmania mainly through international student advisors, sometimes in conjunction with the relevant department. Usually students would self-access such counsellors. Approximately one third of counsellors' workload would relate to assisting international students who are either in the wrong course or unclear about their career intention. Exit counselling from TAFE is offered by the international student advisors on a one to one basis. For some students this involves a discussion about going home and for others the discussion relates to moving onto other institutions (especially university) and what this entails. Where appropriate, this may involve referrals for the student to other relevant services and agencies.

5.2.10 OBSERVATIONS ON RESULTS

The participation rate in response to the questionnaire was limited because the target population was small. In 2003 there were 6 enrolments in Engineering courses, 26 enrolments in IT and 1 enrolment in Laboratory Technology and in total a possible target population of 33, from which 2 questionnaires were received.

Neither of the TAFE students understood the term *credit-transfer* in completing the questionnaire. For the student interviewed (nearly a year later) this had changed, partly as a consequence of his application to, and acceptance by, an Australian university. The course guide (Department of

State Development, 2002) does not include any information on either career pathways or credit-transfer. The Department of Economic Development (formerly the Department of State Development) undertakes the marketing of TAFE Tasmania programs to international fee-paying students and is also responsible for admissions. They would have prepared the TAFE Tasmania course guide for prospective international students.

For VET international students there is sometimes confusion between the terms *credit-transfer*, *recognition of current competencies* (RCC) and *recognition of prior learning* (RPL). Credit-transfer usually applies across all sectors while RCC and RPL are subsets of assessment and are processes of recognition from outside the VET system. L. Smith (2004) documents a number of case studies using RPL at private training providers. Changes to Standard 5 (Recognition of Qualifications issued by other Registered Training Organisations, RTOs) and Standard 9 (Learning and Assessment Strategies) that govern these procedures came into effect on July 1, 2005 (Australian National Training Authority, 2005). Standard 9.1c requires RTOs to develop learning and assessment strategies with regard to pathways.

One student interviewed (interview Case 21) faced a possible transfer from the Hobart to the Launceston campus of TAFE Tasmania if he wished to continue a specialisation in his course in Tasmania. Whilst courses might be structured and delivered to meet local domestic need, for an international fee-paying student who has the financial capacity to relocate, such delivery rationalisations do not necessarily make sense. Sometime the 'bright lights' of larger cities attract students who initially commence courses in Australian regional cities.

An analysis of the exemption reporting data for TAFE Tasmania (Clough Linda, 2005) reveals that of the total international student population for 2003, 19.2 percent either did not complete their course, or

finished their course before the usually standard delivery time. Of the students who completed early (36) the destinations were (in order): the University of Tasmania (9); other providers (9); returned home (6); visa cancelled because of the failure to meet course requirements (5); completed course early (4); withdrawn from course (2); and other (1). Of the 36 students, half completed and transferred onto other providers. This data highlights the flexible structure of the VET system and the timely way in which a student can complete their course requirements early. Table 5.2-1 highlights the pathways of the IT students from this database. At least five of the seven IT students transferred onto other providers, with three of these continuing onto higher education sector courses. It is unclear about the link between attrition from courses and how much of this can be explained by a student's lack of careers advice or a student's unrealistic expectation of what was required in his or her course (let alone its employment outcome).

Table 5.2-1 Destination of TAFE Tasmania International Students Exemption Database 2003 (Completed Course Early and/or Failed to Complete Course

Course	Destination	Numbers of Students
Information Technology	Higher Education	3
	TAFE interstate	2
	Completed Early	1
	Withdrew and returned home	1
Total		7

Source: (Clough Linda, 2005)

5.2.11 SOUTH AUSTRALIAN GOVERNMENT SCHOOLS

While the international fee-paying student industry is dominated by higher education institutions, schools, and particularly schools in the government school systems of Australia (apart from Western Australia), have been involved since its inception. A policy rationale for the

existence of the program of South Australian government schools is outlined in (Department of Education Training and Employment, 2000). The government school systems activities are not only confined to students, as outlined in the range of activities in Table 2.5-1. Many of the international students at this level would continue on to other sectors, as indicated by 100 percent of the schools sample in this study planning to do so.

In 2003 (at the commencement of the year), South Australian government schools had 561 students enrolled in graduate and Study Abroad programs. SA government high schools conduct classes from Grade 8 to 12 compared to other school systems in Australia where high school commences with grade 7. Apart from the year long graduate numbers, some 160 students would have been enrolled in the short term or Study Abroad programs. During the course of the school year more graduate students would have arrived into the program. About 85 percent of graduate students were studying at the Grade 11 and 12 level. *Graduate programs* involve the courses of study offered by SASSAB (SACE). Whilst two students in this study indicated that they studied the IB, they would have been part of a very small minority in the total SA government schools international program. The gender balance in graduate programs was about even. Approximately 40 schools are involved with the department in delivering programs to international students and students at the time of application would usually list three potential schools to attend. Their final selection is completed in conjunction with the relevant international business manager from International Education Services. The largest group of students was enrolled at Glenunga International High School. The schools used in this study for the circulation of questionnaires were amongst those with the largest international enrolments. Only graduate students were given questionnaires in this study.

For the graduate program, the main source countries are: PRC (about 50 %), Hong Kong (15%), Japan (10%), South Korea, Thailand and Vietnam. For the Study Abroad program the majority of students come from Japan. Sister school relationships only exist between a smaller number of SA government schools and schools elsewhere. These operate more on a commercial rather than a reciprocal arrangement. In this study, two of the schools had such relationships: Banksia Park with Bacui School in Shenyang (PRC), and Glenunga with a school in Dalian (PRC).

On arrival in South Australia students would receive a half day centrally delivered orientation program. After this, orientation would be delivered by the school across a twenty week intensive English course (this is pitched at a Grade 11 academic level). Over the last three years an accreditation framework (incorporating quality standards) has been developed. This has been modelled on the Council of International Schools (now the Council of International Schools Australasia) framework. Initially this was piloted in conjunction with Banksia Park High School (who requested that their international program be accredited). The model of accreditation, now being developed by SA government schools for all schools, is one with a self assessment framework supported by interviews, incorporating an audit against the identified standards. It is hoped that a centrally funded accreditation officer will be in place late in 2005 and that all schools with international students will use this accreditation framework. The development of this structure is in line with the requirements for support structures in the ESOS Act.

In terms of the delivery of careers information to students this would usually happen through the course counselling processes at the school level, in conjunction with career pathway planning. For international students the process is essentially the same as for local students with the home group teacher the key person in delivering this. Information would be supplemented by the international students attending open days at

universities and other education institutions. There is recognition that international fee-paying students have the capacity to be more mobile than local students, and that some might transfer to interstate institutions.

5.2.12 OBSERVATIONS ON RESULTS

The majority of the sample came from Glenunga International High school (14 participants or 58.3 percent of the South Australian schools sample). This school has the largest international enrolment of SA government schools.

➤ **Adelaide High**

Adelaide High School has a reputation for being an academic school and has a high multicultural population (there are 62 cultural backgrounds in the school). There are a number of refugees and some second generation migrants and as a result it has a specialised Language other than English program (with seven LOTES including Mandarin and Japanese). In 2003 it had an international student population of approximately 50, and of these, two thirds would have been in the graduate program. The international students mainly come from PRC and Japan, most of who would have been enrolled in Grade 11 and 12. The school has a policy of accepting international students only into the senior school because there are significant demands on enrolment from local students and a limitation on the school facilities, which restrict the scale of its international program. The school has gained international students from siblings of past student enrolment and has picked up transferees who were originally offered places at other schools. The school has sister school relationships with Asahi High School in Osaka (Japan) and is currently negotiating an agreement with a school in Italy. From Asahi High, both study tours (20-30 students) and one or two study abroad students would visit Adelaide High each year.

The students on arrival participate in the corporate orientation program (conducted by International Education Services section of the Department) and then 90 percent would progress onto the International Secondary English course (usually of 20 weeks). The remainder may undertake English courses of a longer duration. The enrolment process into the school incorporates part of the orientation program and as part of the ISE program, students study Australian Lifestyle and History and are made aware of their rights and responsibilities in relation to anti-harassment. This is delivered using Year 8 local students who have been trained in peer support. Career counselling is usually undertaken alongside subject selection and involves a discussion about appropriate subjects for possible career pathways. Other providers (e.g. universities and TAFE institutes) make approaches to the school to talk to international students. Meetings are conducted in small groups with students interested in pathways that may meet their needs. Open days to these institutions are also publicised to students.

From the sample, the international students rated teachers as the most important aspect of their course. All three respondents ranked teachers as first, in giving their ratings on the questionnaire. Follow up from the school over the last two years has revealed that very few of their international students are lost to other states. Most would continue to live in Adelaide and continue on to other sectors of education and training in South Australia.

➤ **Banksia Park International High School**

In 2003 the school had a total student enrolment of 750 students. There were 57 international fee-paying students enrolled who come mainly from the PRC and Japan. The majority of the students were male (in Grade 11 there were 25; Grade 12 there were 9) while the total female international students were 23 (in Grade 11 there were 15 and Grade 12 there were 8). A number of

the males were of a low achievement standard. The sample from Banksia Park International High came from Grade 12.

This school is one of only two schools with 'international' in its title (Glenunga International High is the other one). A curriculum review was undertaken in conjunction with the school becoming involved in the international program. The school has developed programs relating to global understandings, including the development of a global citizen medal. The school has a sister school in Shenyang (PRC) which has been a significant source of international students. On enrolment at the school, students undertake a minimum 10 week intensive English language course. Other subjects are introduced but taught using ESL methodologies to allow students to 'fast track' through this course which also includes a component relating to intercultural understandings. The school is accredited by the International Office of the South Australian Education Department to deliver these lessons.

The international students are introduced to Work Education as a subject in the curriculum and they are taught what they can expect to gain from a western education setting. The students are taken on site visits to all three universities in Adelaide (Adelaide, Flinders, and South Australian Universities). Liaison occurs with representatives from the main courses students tend to enrol in and it is intended that they would gain a good working knowledge of pathways to higher education. They are also given training sessions to assist them complete admission forms. Students would usually apply to all three universities and make a decision on their final destination as a consequence of the offers they receive. In 2003, five students planned to study at university as undergraduates and one at VET.

Some students consider transferring at the completion of their course at Banksia High to interstate tertiary institutions (especially universities in New South Wales and Queensland) but

most remain in Adelaide. Poor academic achievers are guided towards TAFE programs. The take-up rates are limited by poorer academic performance. The school offers VET in school programs. For some students who have been enrolled in these programs in Grade 11 they may head towards enrolling in TAFE after leaving Banksia Park.

The school finds that most high achievers have set specific goals relating to career pathways. Some of these students are also considering gaining permanent residence after completing their tertiary studies. From discussions with staff, the remaining students (approximately half), the goals are not so clear and there are issues arising from being away from home. In part these relate to their level of maturity and a perceived lack of accountability. For some, they are in Australia to have 'a good time' before returning home.

➤ Charles Campbell Secondary School

In 2003 there were approximately 30 international students enrolled in the program at the conclusion of the year. The majority of the students were in Grade 11, 12 and 13 and there were more males than female students. The main source countries were PRC and Japan. The school did not have a sister school arrangement with any overseas schools.

On arrival into the school, the student usually had a one day orientation program which included a counselling process. The purpose of this program was to determine what the student wanted to achieve in terms of careers and field of study. In addition, they received their timetables, met teachers, met some local students and received information about the school computer network. After this day, aspects of orientation continued through the twenty week intensive English program. In some cases students studied English for more than twenty weeks as determined by International Student Services (centrally and outside the school) based on the students pass report cards from

their previous school overseas. In the intensive English program the students studied a Work Education course which provided a basis for a further exploration of their career interest.

The main responsibility for assisting international students with regard to career pathway planning was with the Careers Pathways Senior School Counsellor. This person (based on a recommendation from the International Co-coordinator) assisted students with the selection of their course, pathways and reviewed their results and gave students advice. Only one completed questionnaire was received from students at Charles Campbell. The participant had attended an introductory academic program and saw its usefulness as being 'excellent'.

➤ **Glenunga International High School**

The school is located between the city centre of Adelaide and a city fringe suburb. Because of its inner city location it has had the capacity to take a substantial number of international students (approximately 120 in 2003). It, along with Banksia Park, was one of only two government schools allowed to incorporate 'international' as part of its title. This has given rise to an emphasis on the development of programs with an international or global flavour. In 2003 it was the only government school to offer IB programs and as a consequence these are offered at the Diploma and Middle years of schooling level. The school offers both SACE and IB programs. The school has developed a number of international links including sister schools away from Asia, including one in South Africa.

Approximately 9 percent of the total school enrolments are international fee-paying students. Usually a student arrives into the school to complete an intensive English course (of 10, 20, or 30 week duration). The main source countries for international enrolments are the PRC and South Korea and the school has a sister school in Dalian (PRC).

Two students appear to have attended a twinning program while three of the students were undertaking studies in the International Baccalaureate. Four students indicated that they understood the term credit-transfer but the remainder did not. Seven students participated in an introductory academic program while only two students had received careers advice in their home country. Seven students indicated that they had had careers advice while attending their current institution, and of these students, three rated the advice as 'good' and three as 'satisfactory'. One student was subsequently interviewed.

➤ **Norwood-Morialta High School**

The school agreed to participate in the study but no completed questionnaires were received.

5.3 SECTORS

Notwithstanding issues discussed earlier, about the comparability of data and the changes in data collection over time (especially in 2001) the proportion of international fee-paying studying in the higher education sector has continued to grow (from 26% in 1994 to 44% in 2003) but the schools, VET and ELICOS sectors have all declined as a proportion of the total international student enrolment over this time (see Table 2.2-6). The most significant decline has been in the schools sector (from 13% in 1994 to 8% in 2003).

5.3.1 HIGHER EDUCATION

The OECD has examined the proportion of selected countries enrolments (Table 5.3-1) that are made up of international students. Although this information was published in 2004 the analysis was based on 2001 data. In comparison to the other countries in this table, Australia stands out as having the highest proportion of international students (13.9% compared to an OECD mean of 5.3%) in its total higher education enrolment.

Table 5.3-1 International Tertiary Enrolment – Proportion of Total Tertiary Enrolment

Country	Numbers	%
Australia	110,789	13.9
Canada	133,022	4.6
New Zealand	11,069	6.2
UK	225,722	10.9
USA	475,169	3.5
OECD	1,580,513	5.3

Source: (OECD - Centre for Educational Research and Innovation, 2004) p 155 *Data 2001*

In recent times it would appear that the proportion of international fee-paying students studying in the higher education sector has declined (Table 5.3-2), but this seems to be more a case of statistical realignment. With the use of the PRISMS system introduced in 2002 for the first time to generate international student enrolment data, a 'Foundation Studies/ Non Award' category came into being. Most of this category of students would be studying in institutions attached to higher education institutions. Notwithstanding this qualification, there still has been a significant increase of over double the numbers of enrolments in just seven years.

Table 5.3-2 International Fee-Paying Student Enrolments by Sector 1998 and 2004

Sector	Number 1998	1998 %	Number 2004	2004 %
Higher Education	73,383	49.9	151,798	47.0
VET	37,328	25.4	57,348	17.8
ELICOS	22,541	15.3	61,649	19.1
Schools	13,878	9.4	28,003	8.7
Foundation Studies/ Non Award	-	-	23,978	7.4
Total	147,130		322,776	

Source: (Australian Education International, 1999) (Australian Education International, 2004d)

Table 5.3-3 highlights the relative distribution of international fee-paying enrolments by sector for 2004 (the most recently available year). For this year there were 322,776 enrolments (see Appendix 8 for an explanation of how student data is derived). This table also gives the enrolment for higher education and VET for the broad fields of study for Engineering and Science. Over time it would appear that the proportional numbers studying Engineering have grown slightly in higher education (in 1998, 8.8% compared to 9% in 2004) and that Science has grown dramatically (in 1998, 13.1% compared to 22.1 % in 2004). Much of the recent apparent Science growth relates to a range of factors that have made Australia a favourable destination in comparison to some of its international competitors. The relative costs of tuition fees and living costs (especially in Australian regional areas) and the increased complexity of gaining visas in the USA (post September 11, 2001) appear to account for this growth. The total higher education population in Science has grown through this period, with a steady increase in Life Sciences. Ironically the particular area of growth has been outside the major Science disciplines, in electives and cross disciplinary units. The traditional areas of Chemistry, Physics and Mathematics for the total population reached a peak in 1994 and have eased in numbers since. The figure for Engineering is similar to that of the total higher education population (Engineering 7%) but different to the combined figure of Natural and Physical Sciences (7.6%), and with IT (8.3%) (Australian Vice Chancellors' Committee, 2005b).

Table 5.3-3 International Fee-Paying Students by Sector – Australia

Sector	Total 2004	% 2004	Subject	Total 2004	% Sector Enrolments
Higher Education	151,798	47.0	Engineering	13,665	9.0
			Science	33,554	22.1
Vocational Education	57,348	17.8	Engineering	1,262	2.2
			Science	9483	16.5
School Education	28,003	8.7			
ELICOS	61,649	19.1			
Foundation Studies/ Non Award	23,978	7.4			
Total	322,776				

Source: (Australian Education International, 2004c)

The proportion of international fee-paying students studying Engineering and Science (in particular) is small in comparison with its major competitor countries who market for international students. The OECD has analysed the relevant data between major English speaking countries. However this analysis does not reflect the events of September 11 in the USA and the subsequent changes to visa processing arrangements for students.

In comparison to other English language providers, Australia attracts a lower proportion of foreign students to the science based disciplines, including engineering and agriculture, and a lower proportion to the humanities/arts than the United States, the United Kingdom and Western Europe (OECD – Centre for Educational Research and Innovation, 2004, p. 153).

As part of the accreditation of engineering courses in Australia, Engineers Australia requires an *approved professional exposure*. This is usually 12 weeks over the 4 years of a degree but mainly occurs in third and fourth year. A student would usually initiate the placement with assistance from Engineers Australia. International fee-paying students can do their placement overseas. These placements are becoming harder

to arrange because they are increasingly clashing with part time work arrangements of students in Australia. The way in which these placements are organised seemed to be an issue for some international students at higher education institutions.

As a consequence of the *Washington Accord* signed in 1989, Engineers Australia is the accreditation body for all fields of Engineering. The accord provides graduates of EA accredited programs with recognition at an entry level to the profession in Canada, Hong Kong, Ireland, New Zealand, South Africa, United Kingdom, and the United States of America. The undertaking of an accredited course in one of these countries provides international students with a degree of mobility, to relocate to another Washington Accord country.

A decade-long ‘snap-shot’ of the experiences of first year students at Australian universities has been conducted, involving surveys of students in 1994, 1999 and 2004 (Krause, Hartley, James, & McInnis, 2005). A conclusion from this report refers to the total population: “First year students in 2004 have a clearer sense of how university study will help them achieve career goals” (Krause et al., 2005, p. v). The 2004 study include 185 international fee-paying students. Not only does this report point to the lack of social integration of this population but also that: “the international students appear focussed and goal oriented” and concluded that “parental expectations figure more highly in the thinking of international students than they do for domestic students” (Krause et al., 2005, p. 77).

5.3.2 GRADUATE EMPLOYMENT OUTCOME REPORTS

All universities in Australia participate in distributing the GCCA destination survey on an annual basis. From this the GCCA published a number of reports Graduate Career Council of Australia (2004a); (2004b); (2004c). The reporting of employment outcomes for ‘overseas’ graduate is excluded for the most part because of the difficulties of

deriving a representative sample of respondents from this group (as some students have returned home overseas). Whilst these reports are supported by all universities they shed no light on the varying nature of career provision across higher education institutions, but they are used by some to make crude judgments on employment outcomes arising from higher education programs.

GCCA also produce a series of booklets for different course areas that are used at the careers offices of higher education institutions and are targeted at assisting students. Examples of these are the booklets produced for Engineering (Hosking & Allen, 2001), Science (McNaughtan, 2004) and IT (Heywood, 2004). Heywood (2004) uses the term *pathway* to describe possible course and educational routes to an employment or career outcome in IT. McNaughtan (2004) uses a variety of student profiles in order to explain *career pathways*. Hosking & Allen (2001) use the term *career path*. Clearly some consistency of terminology might be employed by the series editor. A further publication (Careers Centres at The Australian National University and Flinders University, 2004) is aimed at postgraduate students. It talks of “career planning” and “academic and research paths”. None of these publications is specifically aimed at international students.

5.3.3 THE RATING OF UNIVERSITY COURSES

The Good Guides Group produces a publication, *The Good Universities Guide* (Ashenden & Milligan, 2001) and (*The Good Universities Guide 2003*, 2002) which rates university and private college courses. The guide has a section aimed at international students, and ratings on courses are for the total population and are based on a five point scale (very tough, tough, average, easy, and very easy). Data for the rankings is derived from the Course Experience Questionnaire produced by the GCCA.

The Good Universities Guide 2003 (2002) for the year the questionnaire was distributed to international students, was examined for the ratings of Engineering (Table 5.3-4), Computing and IT (Table 5.3-5), and Science (Table 5.3-6) courses at the four higher institutions that participated in the study, to see if there were any similarities with the ratings gained from the questionnaire sample in this study (responses to questions 23 and 24). Ratings for some course were not available, while for Canberra Engineering courses were not conducted in the year the questionnaire was distributed.

Table 5.3-4 Ratings on Engineering Courses

Institution	Course Entrance	Teaching Quality	Overall Satisfaction	Overseas Students
Canberra	-	-	-	-
Curtin (Bentley)	Average	n/a	n/a	247
Monash (Clayton)	Tough	Worse	Worse	584
Tasmania	Average	Worse	Worse	111

Source: (The Good Universities Guide 2003, 2002)

The ratings given in Tables 5.3-4, 5.3-5 and 5.3-6 for the total Australian population were compared to the results international fee-paying students gave in this study. For Canberra the sample size in this study is too small to make any observation. For Curtin, on teaching quality the majority of respondents rated their course as ‘good’ (41.4%) and ‘satisfactory’ (27.6%). For Monash the majority of the respondents rated the quality of teaching as ‘good’ (31.8%) and ‘satisfactory’ (22.7%). A large number of respondents however rated ‘needs improving’ (40.9%). For Tasmania the majority of respondents rated the quality of teaching as ‘good’ (35.5%) and ‘satisfactory’ (38.7%). Monash would appear to have had the poorest responses compared to Curtin and Tasmania. In Table 5.3-5 Tasmania scored a higher rating from the total population in Computing and IT.

Table 5.3-5 Ratings on Computing and IT

Institution	Course Entrance	Teaching Quality	Overall Satisfaction	Overseas Students
Canberra	Average	Average	Worse	61
Curtin (Bentley)	Tough	n/a	n/a	131
Monash (Clayton)	Tough	Average	Average	1431
Tasmania	Average	Better	Average	66

Source: (The Good Universities Guide 2003, 2002)

Again because of sample size, only Curtin, Monash and Tasmania are compared in relation to satisfaction with the institution. No rating is given in Tables 5.3-4, 5.3-5 and 5.3-6 for Curtin. For each of the three courses in Tables 5.3-4, 5.3-5 and 5.3-6 both Monash and Tasmania receive the same ratings from the total population. From the results of international students more of the Monash sample rated their satisfaction as 'satisfactory' (45.5%), while for Tasmania a higher proportion rated their 'satisfaction' as 'excellent'(6.5%) and 'good' (35.5%), but at the same time the proportion of 'needs improving' was higher for Tasmania. More of the Monash ratings were in the mid range while the Tasmania results were spread more widely. A higher proportion of the Tasmanian sample was engineering students but unfortunately the results are not available by specific courses.

Table 5.3-6 Ratings on Science Courses

Institution	Course Entrance	Teaching Quality	Overall Satisfaction	Overseas Students
Canberra	Average	n/a	n/a	3
Curtin (Bentley)	Average	n/a	n/a	28
Monash (Clayton)	Tough	Average	Average	212
Tasmania	Average	Average	Average	19

Source: (The Good Universities Guide 2003, 2002)

Table 5.3-7 provides the relative ratings for each of the courses. Again rankings are derived from the Course Experience Questionnaire. The publishers of (*The Good Universities Guide 2003, 2002*) caution the interpretation of these ratings as “ratings and rankings are indicators only” (p. 129). Again a five point scale is used (in the form of stars). Nationally there would appear to be quite different results for teaching quality and overall satisfaction, with Computing and IT having the same ratings as Sciences but different to the Engineering for entrance requirements.

Table 5.3-7 Overall Ratings for the Courses

Course	Course Entrance	Teaching Quality	Overall Satisfaction
Computing & IT	***	*	**
Engineering	****	*	**
Sciences	***	****	*****

Source: (The Good Universities Guide 2003, 2002)

5.3.4 VET

The proportion of the VET sector enrolment has declined over time (Table 5.3-2) from 25.4% in 1998 to 17.4% in 2004. Over half the top source countries for VET in 2004 showed a decline in numbers over the previous year (Table 5.3-8). In terms of the proportion of VET sector enrolments studying Engineering and Science (Table 5.3-3) the former field of study has remained at about 2 % (1998: 2.4% compared to 2004: 2.2%) while the same pattern of increase for Science in the higher education sector is repeated in the VET sector. The Science field of VET enrolments accounted for 7.7% in 1998 and 16.5% in 2004. The reasons for this would also be similar to that given for the higher education: costs advantages over major competitors together with the introduction of a more complex visa processing regime for student visa, especially post September 11 in the USA. The later changes seem to have had a special impact on those students applying from southern Asia countries. The

overall potential for the growth of the VET sector is limited by a lack of knowledge across Asia especially, about the purpose of courses in this sector. By the very nature of CBT assessment and the flexibility of course structures not all courses are necessarily available to international students. A recent study of all students cited by (Mouhtouris, 2005) found that “the flow of vocational education and training students to higher education is three times higher than higher education to VET” (p. 9).

Table 5.3-8 Major Source by Country of Origin for VET International Students 2004

Nationality	Numbers	Growth 2003 compared to 2004
PRC	9,779	+
Hong Kong SAR	5,580	-
Japan	4,774	+
Thailand	4,227	-
Indonesia	3,994	-
South Korea	3,616	+
Malaysia	2,063	-
Bangladesh	1,970	+
Brazil	1,598	+
India	1,583	+
Slovakia	1,454	-
Chinese Taipei	1,442	-

Source: (Department of Education Science and Training, 2005b) Adapted from Table F

5.3.5 SCHOOLS

The proportion of schools enrolments (as discussed earlier in Chapter 4) suffers from confusion with the development of the Foundation Studies type of course in the higher education sector. Issues associated with the welfare of a student (many of whom are less than 18 years of age) require institutions to put additional arrangements in place, partly in response to various regulatory requirements. Table 5.3-9 shows that 7 of the top 10 source countries for this sector in 2004 had a decline in numbers over the

preceding year. Some of the traditional markets like Malaysia and Hong Kong are in retreat. These countries have increased their educational capacity, so, whereas in the past students travelled overseas, they have more recently tended to postpone doing this until a later age. An example was interview Case (7) where there was a strong tradition of travelling overseas for education. Schools have increased their programs in recent years usually in concert with the type of sister school arrangements that Banksia Park and Glenunga have in place with schools in China.

Table 5.3-9 Major Source by Nationality for Schools International Students 2004

Nationality	Number	Growth 2003 compared to 2004
PRC	12,557	-
South Korea	4,455	+
Hong Kong SAR	2,021	-
Japan	1,691	-
Indonesia	1,033	-
Thailand	896	-
Malaysia	872	-
Chinese Taipei	656	-
Vietnam	567	+
Germany	536	+

Source: (Department of Education Science and Training, 2005b) Adapted from Table F

5.4 CAREER PROVISION FOR INTERNATIONAL STUDENTS

For those associated with managing services for international students, quite often a goal is to find ways of integrating these students with local students, in part for cultural enrichment. Where specialist services exist to address the needs of international students, Australia currently relies on an ad hoc system of international advisors (many with considerable cross-cultural experience). There is, however, no current competency

standard or pathway to enter such a role. Very often issues of personnel counselling are interrelated to course counselling and also a lack of clarity by students about possible career intentions. Where specialist services exist in institutions with regard to careers or employment it usually reflects the local Australian conditions, not necessarily that pertaining to the international student returning home to what in many cases is a different set of labour market circumstances. There is recognition of this different set of circumstances, at Curtin, Tasmania and Tasmania TAFE, but in these cases limited resources mean quite often potential international student needs are left unmet. Monash has established a specialist careers counselling position in recognition of the differing needs.

One difficulty for Australia is that with such a diverse array of source countries contributing to its international student program it is hard, other than in general terms, to broach how students might succeed on entry into a career when they return home. The Curtin Advantage program offers the prospect for attempting to contextualise learning for some international students in their home country. The Washington Accord allows for engineering students to have mobility across member countries. For some students their pathways are very clearly tied to family aspirations to pursue business ventures and/or to return home and participate in managing the family company.

One aspect of the international student experience in coming to Australia is what (Hellsten, 2002) describes as “dreaming the dream”, or in other words expectations meeting realities. She points to the: “...little or limited mutual understanding among academic staff and the student body of the kinds of cultural and socio-adaptive challenges that a new and often times alienating education setting places on students” (p. 3).

She goes on to state that the process of learning knowledge and gaining the required skills is often: “a process which is acquired by ‘trial and

error' rather than explicit learning.” (Hellsten, 2002, p. 8) Part of this dream should be to assist international students to move seamlessly from school and study to work. For this to happen though, cultural sensitivities and understandings need to be taken into account and appropriate services developed.

5.4.1 ASIAN CAREER PROVISION AND SUPPORT OF STUDENTS

Leong (2002) comments on career provision in PRC, Japan and Taiwan. In part he describes provision as one of: “...transferring Western models to Eastern cultural contexts” p. 277. He believes that this has happened because of: “...Asian countries’ reliance on Western institutions of higher education to train and educate their political and intellectual elites.” p. 278-9 For the PRC, Leong believes that the anti-academic forces of the Cultural Revolution delayed the development of career services: “In Japan’s case, the lifetime employment practices within Japanese organizations eliminated the need for career services.” (2002, p. 280) He suggested that because of the close ties between the USA and Taiwan that the latter has developed career models based on the former.

For many students in Asian countries, career education in its crudest form related to undertaking a test and being streamed into an academic or vocational pathway. Recent educational reforms in Korea, Japan and Taiwan have set as a target measures to move away from this traditionally held view of education. In Japan the Ministry of Education, Science, Sports and Culture (1999) outlines the focus of educational reforms in terms of goals relating to the development of a lifelong learning society, and reforms in secondary education. The secondary education reforms also include not only structural reforms in terms of the way students can gain course credits, but also the adoption of measures relating to school guidance, including establishing a system of educational counselling. A further area of reform includes establishing educational cooperation, including the promotion of a foreign language (usually English).

Similar educational reforms of structural changes to the education system, the development of lifelong education ethos, international cooperation and a learner-focussed curriculum are outlined in policy statements for South Korea in (Ministry of Education, 2000) and Taiwan (Council for Economic Planning and Development, 1997). In Korea there has been an examination of adopting a system: “which permits students to move between the college-bound academic track and the job-preparatory vocational track” (Ministry of Education, 2000, p. 177). In Taiwan there has been an: “Increase training on priority areas of education, such as pedagogy of new teaching materials, capacity for advising students” (Municipal Education Bureau - Taipei, 1998, p. 60). Similar types of developments have been occurring in many of the Asian source countries for Australia’s international students, especially over the last decade.

5.4.2 CULTURAL INTERPRETATION

Most of the main Asian originating countries for Australia’s international students do not have well developed systems of career education, although provision is being developed in conjunction with educational reforms. Leong (2002) points to what he describes as *etic* verses *emic* approaches to culture and desire for modernisation and the wholesale adoption of western Science in Asian countries: “Etic refers to the search for universal laws of behaviour, as represented by American psychology, whereas emic refers to the culture-specific approach, as represented by the ethnographic method of anthropologists.”(Leong, 2002, p. 280) The transference of career models has come about because of what he sees as the training bias (the flow of students to the West bringing back ideas). Wachob (1999) cautions with respect to the impact of Western ideas in Taiwan, by pointing out: “Western ideas have been borrowed in whole or in part and Western ideas of individuality have become more valued, but not totally” p. 6.

A Taiwanese science teacher has described these tensions as:

A society where conformity is emphasised may tend to ignore the difference between different forms of individuality. However one of the most significant meanings of the nature of science is to explore the given difference and explain why these differences exist (Wang, 2000) p. 618.

A study into cultural flows in Asia and with Asia is being undertaken at Monash. In part, the project is examining whether cultural flows have contributed to new views about Asia and Australia and how this contributes to a sense of identity. (Burgess, 2002) examines a “sense of belonging” in the context of Asian Studies and the forces of globalisation, and how this shapes identity and advocates the value of “...attempts to understand and engage with emerging networks that are transnational or inter-Asian...” p. 12. The outcomes of such studies may have implications for how Australian education and travelling within the region for education is viewed, in the future.

5.4.3 CULTURAL VALIDITY

Lent & Worthington (2000) raise the question of whether career development theories are culturally valid:

...suggest that (a) conclusions regarding the cross-cultural validity of particular career theories should be informed by empirical data; (b) it is well to avoid perpetuating uniformity myths regarding particular cultures; and (c) generic career theories may help to account for the work transition of students from a variety of cultural groups and, in at least some cases, can accommodate study of variables and processes that are assumed to be culture-specific (Lent & Worthington, 2000, p. 382-383)

Given the lack of a career education culture and infrastructure in the countries from where many of Australia’s international students originate, the nature and response of comments from the students both in the questionnaire and interviews seems reasonably informed. However because of the voluntary nature of both the questionnaire and interview respondents it can be assumed that they may be amongst the more motivated students in terms of making a response on this subject.

5.5 FACTORS INFLUENCING CAREER ASPIRATIONS

In a study of students pursuing a Science and/or Engineering career, Wei-Cheng (2003) point to “academic proficiency” as being the only significant factor impacting on career intention. Parental expectations and school involvement were not seen to be significant. It is concluded that: “...none of the family variables had a significant impact on persistence in [Science and Engineering] career aspirations” p. 240.

Another study (National Board of Employment Education and Training, 1995) has indicated the family as an important factor in relation to career development. For the interview sample (see Table 4.3-16) this was the second most important factor (after interest in the subject) given as a reason for the student taking up their current course. Hughes C. (2002) has summarised the theoretical perspectives on the influence of the family on career development. In noting the implications for career practitioners she observes that:

...specific intervention may be required to promote the career development progress of adolescents and young who spend significant amounts of time away from their family to attend educational institutions (e.g. international students and tertiary education students studying away from home).
Hughes C. (2002, p. 11).

Brown, Moerkam & Vocken (1998) highlight the importance of teacher and student attitudes as being important factors in shaping whether a student commences a particular pathway while Yeung & Yeung (2001) in a study of 199 Grade 7, 9 and 11 Hong Kong students: “...found that Task, Effort and Competition orientations had relatively stronger impacts on education aspirations whereas Task and Praise had stronger impacts on career aspirations” (Yeung & Yeung, 2001, p. 1).

The impact of the family on international students could be different to that of the traditional western societal factors impacting on career development. The link between the family and international education

has been made by the OECD – Centre for Educational Research and Innovation (2004). The evidence from interviews with students in this study, highlighting their intention of coming to Australia to study, appears also to be linked with that of applying for permanent residence: this was the case for five of the students interviewed. This may be the first step in what eventually could be a process of chain migration involving other family members.

Many Asia-Pacific students and their families expect that a foreign education, particularly one provided in the provider nation, creates advantages because of the growing importance of globally mobile labour, business and knowledge. (OECD - Centre for Educational Research and Innovation, 2004, p.150)

In part, this also points to why there has been a rapid growth in student choice in some subject fields, especially business and computing. In the period between 1997-98 and 2005-06 the Australian government has increased the proportion of the skilled stream of its immigration program from about 45 per cent of the total migration program (Australian Bureau of Statistics, 2004a) to approximately 70 per cent (Figure 5.5-1). The allocation of an additional 20,000 skilled visa places for 2005-6 by the government compared to the previous year (Vanstone, 2005a) not only highlights skill shortages in Australia but tends to reinforce this link. Yet despite this the (OECD - Centre for Educational Research and Innovation, 2004, p.172) citing a EduWorld study, found that a “family [wanting its son or daughter] to study abroad” only ranked as the fifth most important factor, when 1,000 students from ten Asian countries were surveyed in 2001. The recent changes in the nature of the Australian immigration intake might be increasing the importance of this factor. More research needs to be undertaken to explore this potential link. Hughes C. (2002) point remains valid, especially for younger and less mature international students.

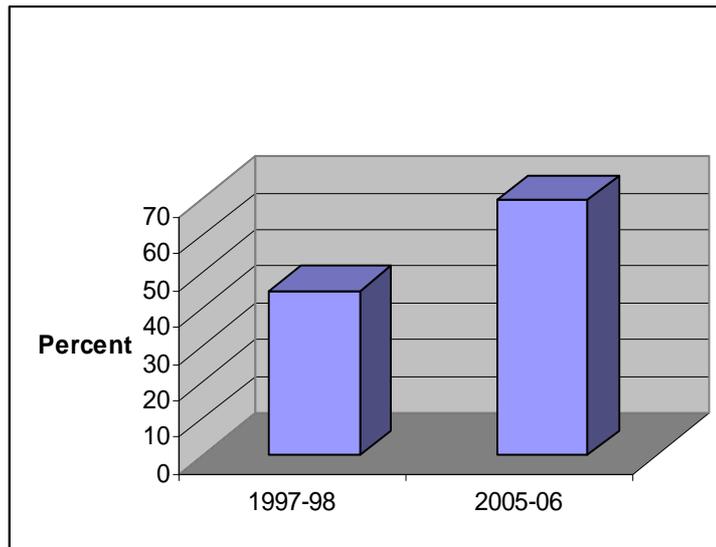


Figure 5.5—1 Skilled Stream as a Proportion of the Australian Migration Program

5.6 GENDER

5.6.1 CONSIDERATION OF SELVES

An examination of how women see themselves as future scientist has been conducted by Wai-Ling & Nguyen (2003). They report that the literature on this subject concludes:

...those who chose a career path early and continued along the same path into adulthood, were more likely to report that career role models were salient in their career development. Given this framework, it is not surprising that in order to attract adolescent girls to science, or expand the range of girls' career-related possible selves, mentoring and intensive science programs have been recommended (Wai-Ling & Nguyen, 2003, p. 253)

In a study of students from the eighth grade in the USA (National Longitudinal Survey of 24,599) examining Science and Engineering (SE) aspirations, the conclusion has been reached that: "Men were more likely than women to persist in SE career aspirations" (Wei-Cheng, 2003, p. 234). From this study it was found that: "... less than one fourth of the students who aspired to SE careers maintained SE aspirations 6 years later." p. 241

This study was of American students with diverse cultural backgrounds, rather than one involving international students, but it concluded: "... counsellors should take a proactive approach to trialling developmentally appropriate and culturally sensitive career interventions for individuals from diverse cultural backgrounds" (Wei-Cheng, 2003, p. 242).

Similar studies on international students do not seem to have been conducted with the possible exception of Ang (2001) who at least has drawn the distinction between traditional counselling differing from that for returning Singaporean international students. She observes that:

The tenet of 'individualism and autonomy' has taken little consideration of clients who are culturally different from the Western mainstream. Western societies emphasis that as individuals grow and mature, they are to increasingly become separate from their families. Career counselling thus focuses on assisting individuals to trust their own decision-making ability and become less dependent on their families (p.131).

She goes on to describe the traditional need for students from Singapore to consult older members of the family as appearing in a western context as: "an individual decision [which] can be viewed by a Western - trained counsellor as being 'immature' " (Ang, 2001, p. 132). More international fee-paying students surveyed in this study were male. No data in this study was found to confirm the views of Ang although interviewee Cases 2, 9, and 22 acknowledged the influence of the family as contributing to them deciding on their course of study.

5.6.2 OECD – DATA

The participation rates of females in education according to the OECD (Table 5.6-1) shows that in Australia proportionally more domestic female students participate in education, but that this is not the case for international students. With the exception of New Zealand, this also appears to be the pattern prevailing in the other countries listed and consistent with the OECD mean.

Table 5.6-1 Female Participation Rates in Education

	Domestic Students %	Foreign Students %
Australia	54.2	46.9
Canada	56	46
New Zealand	58.6	50.4
UK	54.5	47.8
USA	55.9	41.9
OECD mean	52.7	47.4

Source: (OECD - Centre for Educational Research and Innovation, 2004, p.241). Adapted from Table 6.2, Data 2001

In examining the patterns of international student participation in the main receiving countries, we also need to view the female participation rates, especially in higher education in the source countries:

In the United States, New Zealand, Australia, Canada and the United Kingdom, the imbalance reflects disparities in the education of males and females in the main countries of origin of their international students – that is, in Asia. Domestic female participation in tertiary education in the top Asian sending countries is relatively low: 36% in Korea, 45% in Japan, 41% in Turkey, 38% in India, 43% in Indonesia, compared to an OECD mean of 53% in 2001-2. (OECD - Centre for Educational Research and Innovation, 2004, p. 242)

There is a considerable variation across the fields of study pertaining to Engineering and Science. Table 5.6-2 highlights these variations for international students who commenced their studies in higher education in Australia in 2003. The Natural and Physical Sciences and non award courses had a higher proportion of female students. Engineering had the least proportion of female students (15.9%) and Information Technology also had a similar pattern (23.2%). The gender balance would appear to be deteriorating in Engineering as Otmar (2001) cited a figure of 18 percent of Engineering programs in 2001. This pattern of gender distribution across the fields of study is not peculiar to Australia. Wai-Ling & Nguyen (2003) quote American figures from 2000 where

“approximately 17% of physics, 17% of engineering, and 28% of computer science” (pp. 252) undergraduate degrees are awarded to women.

Table 5.6-2 Percentage of Commencing Overseas Students in Higher Education by Field of Study and Gender 2003

	Males %	Females %
Natural and Physical Sciences	46.8	53.2
Information Technology	76.8	23.2
Engineering and Related Technologies	84.1	15.9
Non Award	43.9	56.1
Total	52.5	47.5

Source: (Department of Education Science and Training, 2005e)

The 2003 overseas enrolment figures are given in Table 5.6-3 for the four higher education institutions participating in this study. The figures include both onshore and offshore enrolments. For two institutions, Curtin and Monash, most of the total overseas enrolment are female (51.98 % and 52.86 % respectively) while this is not the case at Canberra and Tasmania (45.23 % and 46.71 %).

Table 5.6-3 Total Overseas Students by Selected Institutions 2003

	Male	Female	Total
Canberra	1236	1021	2257
Curtin	6542	7082	13624
Monash	7540	8456	15996
Tasmania	1012	887	1899

(Includes onshore and offshore students)

Source: (Department of Education Science and Training, 2005e)

The question is: are equity targets in, say, the Sciences, IT and Engineering fields of study skewed by international fee-paying students being attracted disproportionately to particular fields of study? For Science there is an equity target figure of 40 percent (Australian Council of Deans of Science, 1999). Table 5.6-4 gives the gender breakdown by course and also for each of the higher education institutions total student population who commenced in 2003. For all four institutions the majority of the onshore student enrolment is female (more so for Canberra and less so for Curtin). Table 5.6-4 not only shows a variation across universities but also across courses. Both IT and Engineering on this data have many more males (77 % and 85 %) compared to female students. For the total student population commencing in 2003 in the Natural and Physical Sciences, data in Table 5.6-2 would meet the Science equity target.

Table 5.6-4 Commencing Students 2003 by Gender (Male/Female)

	Natural & Physical Science	IT	Engineering & Related Technologies	Non Award	Male/ Female %
Canberra	277	434	20	151	43/57
Curtin	711	577	1032	1421	47/53
Monash	1801	2922	1351	912	44/56
Tasmania	468	850	195	23	44/56
Male/Female %	46/54	77/23	85/15	44/56	

Source : (Department of Education Science and Training, 2005e) Adapted from Tables 3, 7, 8

5.6.3 **TRADITIONAL AND NON TRADITIONAL OCCUPATIONAL ROLES**

A considerable amount of effort has been expended with Australian domestic students on promoting non traditional occupational roles over the last two decades. Most of this activity has occurred under access and equity programs. For the most part there has been no dramatic change in the numbers of females entering Engineering and IT. There has been some change, in some branches of the Sciences. Whilst there has not

been a dramatic change in numbers of students entering these fields, there appears to have been a shift in the positive acceptability of women entering these professions. Specific examples of this activity have been the production of educational kits such as those from Tasmania (Stephens, 1995) whilst others have featured successful role models in a non traditional role and/or industry. An example of this is the careers publication (Educational Programs Branch - DECCD, 1997) produced annually in Tasmania for a number of years in the 1990s and distributed to all Grade 10 students in government and non government schools. This publication featured profiles of a female geologist and a female environmental consultant working in the mining industry.

Whilst these developments have influenced Australian domestic students, the situation for international students is affected by both the participation level in higher education in the source countries (as discussed earlier), and religious or cultural views about a women's role in society. Given that a majority of Australia's main source countries are in Asia, religious values like those in Confucian societies, is pertinent. Sheridan (1999) describes the impact of the economic recession in South Korea in 1998:

... women were let go from companies first, and of the women the young women were let go earlier than older women. It was not just assumed that the young women would have parents and probably an extended family to look after them, or that most families were ultimately dependent on a primary male breadwinner; there was really also an underlying assumption that men had a greater right to work than women had (Sheridan, 1999, p. 225).

In Japan the view of female workers is reflected in the perceived differences in salaries between men and women. Sheridan, quoting an interview with a Japanese company executive, records:

A university graduate in this company must be ready to work overtime or be transferred to different cities. We have a group

doing sales, then another group doing clerical work. So of course females are assigned to the clerical section. It is from that that the difference in salary comes (Sheridan, 1999, p. 204 - 5).

5.7 SCIENCE, MATHS, ENGINEERING AND INFORMATION TECHNOLOGY (INCLUDING COMPUTING)

In this study, 29 percent of the higher education students (Table 5.7-1) have been attracted into Science and/or Engineering courses. This was determined by analysing the students' responses to question 12 in the questionnaire. The greatest change, from the previous to current the field of study was at Monash. There may be a relationship at Monash between this result and a higher percentage, of its sample being postgraduate students but it is hard to form a definitive conclusion. The Monash sample members had the poorest background in career preparation and counselling in their home country. However they obviously had the generic skills to gain entry into their courses in Australia. As referred to earlier, it may be that they have enrolled in a cross discipline or elective Science in which the prerequisites were not a significant component of the admissions requirement. It may be that travelling to Australia for education was seen as an opportunity to tackle a new subject field. Regardless of these possibilities there may be implications for course prerequisites. How important is it to have a background in Science and/or Engineering before commencing studies in these fields? What is the success rate of such students? Further research would appear to be needed to answer these questions.

Table 5.7-1 Course Selection Pathways into Science and/or Engineering

Institution	Previous Course in Science and/or Engineering	Numbers in Study
Curtin University of Technology	22	29
Monash University	13	22
University of Canberra	2	2
University of Tasmania	23	31
Number in Sample	60	84

Other factors such as the students' level of motivation and/or the fee-paying status may be relevant. An increasing number of students are completing double undergraduate degrees with the resultant outcome that they become more attractive in the job market. Ang (2001) suggests that as a reaction to acculturation to the dominant culture over time the students may have reacted to the factors that led them to enrol in their original course when enrolling in a subsequent course:

As their studies draw to a close and they have to prepare to return home, they might experience conflicts between pursuing self – realisation or individuated career goals and group – oriented ones. For example, Asian students often find that their choice of undergraduate study had been strongly encouraged by their parents as being good for their future. However as they near graduation, these students might feel that the career options generated by their course of study might not be suitable for them. (Ang, 2001, p. 133)

Wei-Cheng (2003, p. 238) state in their study that: “Male participants (26.5%) were more likely than female participants (12.1%) to persist in their SE career aspirations. Chi-square analysis did not show a significant difference as a function of race ($x^2 = 4.93, p < .177$).”

In a study of 289 graduate Science and Engineering students Einarson & Santiago (1996) examined gender and ethnic differences impacting on potential career outcomes:

Overall, our findings support previous evidence that women students in graduate science and engineering have lower academic self - confidence than their male counterparts. However, the influence of gender was less pronounced in relation to academic self efficacy and did not enter into models predicting career related outcomes expectations. (Einarson & Santiago, 1996, p. 4)

Support mechanisms are seen to be important in terms of career development and establishing a career pathway:

Helping young people to see the explicit connection between mentoring and their own possible selves can increase the likelihood of career exploration and intentional engagement in career-related activities, and serve to facilitate positive career development over time. (Wai-Ling & Nguyen, 2003, p. 262)

de Almeida, Leite & Woolnough (1998) arrive at the following connection between Science subjects and careers:

The physicists have a high probability of coming from a scientific home background. Both physicists and chemists have decided very early to go on studying physical sciences. Students wanting to pursue careers on chemistry, mathematics, biology, health sciences and architecture were the ones that have decided earlier what type of career they wanted in higher education (p. 3).

Whilst these studies are useful to provide a context to make judgements about careers and Science and Engineering, and in some case involve ethnic factors, none of the studies relate specifically to a population of international students. Clearly there is scope for further work to be done.

5.8 SUMMARY

The results obtained from the questionnaires and interviews have been discussed in terms of the feedback from the institutions that took part in this study. These results have also been discussed in the light of the career provision available at the respective institutions and have been examined by sectors: higher education, VET and schools. The discussion has also involved educational reform and career developments in some Asian countries together with comment on the cultural views of career education. There has been a consideration of gender aspects in relation to careers, drawing on both OECD data (including participation rates in education) and the available literature review. Part of this discussion has related to traditional and non-traditional occupational roles and the factors that impact on participation in Science and Engineering courses.

There has been a dramatic increase of international fee-paying students in recent years and reasons have been given to explain this increase. The pattern of this increase across the subject fields of Science and Engineering has varied considerably. A number of the results have been discussed in the light of the career education model that prevails at the respective institution and in addition, a number of results, including a significant number of the sample members having entered the Science and Engineering field of study for the first time, have been discussed.

One institution (Monash) has recognised the particular needs of international students in relation to careers advice and has recently established a staff position to service this need. Another institution, (Curtin) has endeavoured to develop a program with an offshore capability to provide international students who require work or professional experience as part of their courses with the possibility to do this in their home country. On a sector basis there has been a considerable increase in the proportion of international students studying in higher education. In this sector the growth has been greater in Science rather than Engineering. Where the growth has occurred in the Science

field of study it appears to have occurred in the electives and cross discipline areas rather than in the disciplines as such.

The consideration of careers and international students needs to be viewed in the context of the enrolment patterns in the home countries (especially in relation to gender). The discussion needs to be also considered in the light of the nature of career education provision in the students' home country and with regard to recent education reforms that have emerged in Asian countries over the last decade, given the significance of the major source countries of international students. The factors impacting on career development decisions in this study rank the family as the second most important factor rather than first, as found in some other studies (National Board of Employment Education and Training, 1995). There appears to be an emerging link between the international fee-paying student family as a factor and Australian government policy decisions in relation to skilled migration.

Chapter 6 considers the major findings of this study and includes a discussion of the changes in the models of career provision available at each institution from 2003 until the present. In addition, the Chapter outlines some broad principles relating to the provision of careers services for international fee-paying students. The Chapter also includes a discussion of a number of implications for stakeholders with regard to career provision and international students. The usefulness of the concept of a *career pathway* in viewing a students' progression through various entry and exit points of a course is also commented upon, along with how "dreaming the dream" might be realised when making the transition from school or study to work.

Chapter 6

CONCLUSIONS

6.1 INTRODUCTION

This study comes soon after the OECD conducted major investigations into career education (OECD, 2004a) and transnational education (OECD - Centre for Educational Research and Innovation, 2004) and at the same time as a major review into the ESOS Act (PhillipsKPA and Lifelong Learning Associates, 2005) and at the time that the Australian Blueprint for Career Development (Miles Morgan Australia, 2005) is being undertaken. It is significant that one in five enrolments in the Australian education and training system is an international student. The proportion of international fee-paying students studying Science and Engineering in Australia is smaller than that in the USA and about the same as the UK (Australia's two major competitors for international students). Some change has started to occur in relation to this pattern, especially in the light of post September 11 USA visa processing changes and the slow down in the numbers of international students studying there.

Major findings in this study relate to the way in which the term *career pathway* is used on a number of Australian education websites and in terms of quantitative and qualitative data. The findings relate to the level of career background that international students had in their home country before coming to Australia. A significant proportion of the sample (68 %) had not had careers advice before making the decision to come to Australia for education and training. Just over half the sample had researched the recognition of their course in Australia with home country authorities. Arising from the findings, there are a number of implications for a variety of different stakeholders in the Australian education and training system. As a consequence, a number of

recommendations are formulated for the consideration of these stakeholders.

6.2 MAJOR FINDINGS

6.2.1 CAREER PATHWAYS

Inconsistent terminology is used to describe pathways across the AEI, Study Australia, AQF and IDP websites even though the AEI and Study Australia websites are both produced by the same government department (DEST). The international student market is very competitive. Greater mobility by young people across international boundaries requires us to be more explicit in explaining the basis of our education and training system and already some of our competitors have embarked on major projects to address this. In Europe the Bologna Process, involving a greater cooperation amongst higher education institutions in forty countries is seen as a possible threat to Australia (Department of Education Science and Training, 2005b). A similar process amongst VET sector institutions in Europe in thirty two countries is occurring with the Bruges/Copenhagen Process (Department of Education Science and Training, 2005a). Both processes aim to develop quality frameworks, improve credit-transfer and recognition arrangements. The comment has been made that:

“Qualifications should be understandable internationally and transparent in order to increase their international validity and portability, and to ease the work of recognition arrangements and credential evaluators” (OECD - Centre for Educational Research and Innovation, 2004, p. 290).

To some extent the appeal of the VET sector to international students has been limited because, for many of Australia’s major markets, the principles underlying this sector (e.g. CBT, Training Packages) are not readily understood, nor how this sector can articulate with other sectors. The higher education sector and specifically universities on the other

hand are known to international students and are seen as institutions to which one should aspire to gain entry, and as a consequence their market share has grown more strongly in comparison. Haas (1999) points to a possible relationship between level of economic development and the flexibility of a country's education and training system:

“There appears to be correlation between broad availability of TVE/higher education articulation arrangements, and an economy that has a significant services sector, high technology industries and substantial manufacturing capacity. Such a national economy demands continual workforce retraining / upgrading” (p. 35).

The breadth and choice of VET programs available to domestic students might in turn be a disadvantage when viewed by prospective international students who do not readily understand this sector.

Robinson (2004) has developed a technique for identifying and presenting pathways as a tool to view students' progression through their studies. In this context *pathways* are used to assess admission policies. *Career pathways* in the present study have been viewed more broadly, although the notion of a progression through levels of education, incorporating a discussion of entry points and exit points, remains.

As highlighted in this study, there are implications for the need for cultural understanding both by international students of Australians, and Australians of international students. A considerable amount of the literature on international fee-paying students in Australia is linked back to marketing issues rather than focused on consideration of wider issues and in particular how having one in five students sourced from overseas could be impacting on other aspects of education and training. Examples of future focus might be on pedagogy and on curriculum areas such as course construction and delivery methods, let alone the wider impact on the education and training system of having such a significant part of the

population who are international students. Hellsten (2002) discusses “dreaming the dream” and international student expectations, and suggests that: “The expectation is that cultural and social integration into the Australian community may bring about the effect of achieving faster learning outcomes” (p. 6). Is this the case? Do we have the research evidence to formulate a view on this? This will be discussed later in this Chapter.

6.2.2 QUANTITATIVE FINDINGS

Of those students who had transferred from offshore to onshore programs the greatest concern was English. This was raised by seven of the ten respondents. It was also explained at interview by Case 5 (p.191-2). Twinning programs would appear to assist international fee-paying students by allowing them to become familiar with their course before they move from offshore to onshore; however there are questions about certification of the home country portion of the course in some countries and the inherent value of this. Case 7 at interview commented on this (p.194). A question regarding these programs is what the impact on the students is, (in effect) arriving part way through or in the middle of their course in Australia? This was discussed by Case 18 at interview (p.193).

In terms of knowledge about major characteristics of the structure of the education and training system, only 51 percent of students responded in the questionnaire that they understood the term *credit-transfer*. If other sectors are excluded, this rises to 61 percent for the higher education sector. Females were more likely to be informed than males. Undergraduates were more likely to know compared to schools or postgraduate students. Knowledge was lowest amongst the schools sample even though over half its members had studied their previous course in Australia.

Participation in introductory academic programs prior to the main course appears to be limited to a minority of students (39.8%), and females were

more likely to participate in such programs than males. Schools sector students were more likely to participate in such programs than undergraduates or postgraduates. This finding of the participation in orientation programs is consistent with that found by (Krause et al., 2005, p. 76). Teachers or lecturers were ranked as being the most important aspect of the course to students by 72 percent of respondents (excluding those from Monash).

Only 52.7 percent of students had researched the recognition of their current course in their home country although there were differences by sector that saw this increase for the higher education sector in comparison to the school sector. Even within the higher education sector, responses varied widely between institutions (from 36 % to 84 %). Males were more likely to have researched this aspect than females. Issues were raised by students in relation to their satisfaction with the quality of teaching in their current course and with their current institution. These findings appear to mirror those of other studies (Krause et al., 2005, p. 76) where it has been found that international students appear to be more critical in expressing their views on these matters than their domestic counterparts.

Of the questionnaire sample, 68 percent of respondents stated that they did not have career preparation or counselling in their home country before coming to Australia, whilst 25 percent did and 4 percent did not specify an answer. Males were more likely to have received this advice compared to females. Undergraduates more than postgraduate or school sector students were likely to have had career advice.

What does this mean for our assumptions about the notion of career pathways? A consideration of career pathways has a special significance given that AEI has identified study pathways as one of the foci of the Study Australia market campaign in 2005-06. Findings from this present study have identified a lack of consistent terminology in examining the

notion of pathways to international students on major websites used by them to access information about Australian education and training (AEI, Study Australia and IDP). AEI might need to consider the use of this strategy and work with member institutions to clarify some of the key points about study pathways.

Admission officers should be informed about the lack of career information that prospective students have had as recorded by this study and maybe they could be up-skilled in some basic aspects relating to talking to students about career pathways. This would be in keeping with a recommendation from the (OECD, 2004a), namely that:

Governments should also try to ensure that tertiary career guidance services are comprehensive: encompassing not only advice at the point of enrolment, but also career-management and the development of employability, links between students and future employers, and job placement (p. 143).

Currently there are no professional qualifications necessary for either those people acting as international advisors, or counsellors and/or admissions officers in Australian education and training institutions. Some initial work has commenced along these lines by ISANA (ISANA : International Education Association, 2005). This should be extended to cover a careers dimension for students and build on the work undertaken for the National Standards and Accreditation of Career Practitioners Project (McMahon, 2004).

Of the questionnaire sample, six (or 5.5%) did not see that their current course matched their career intention. This figure is low given the high number of students who had not accessed careers advice prior to coming to Australia. A majority of the questionnaire sample members (58%) accessed career advice at their current institution. Males were more likely to access this advice than females. Of those accessing careers advice in their current institution, 21 percent indicated that it 'needed improvement' or was 'unsatisfactory'. In spite of these findings students

cited a diverse array of intended careers (44). The ‘wellness’ of the match between intended career and course was described by 92.3 percent of the sample as either ‘very well’, ‘fairly well’ or ‘reasonably well’.

6.2.3 QUALITATIVE FINDINGS

Between completing the questionnaire and being interviewed (approximately 10 months later) 13.6 percent of the interview sample had changed or had refined their career intentions. Interest in the subject and then family influences were the two most important aspects in determining why students undertook their current course.

There appeared to be a distinction between gaining a professional qualification, and the students’ future ‘working’ life beyond their course. Comments to this effect were expressed by 18 percent of the interview sample. This was summed up in an interview with Case 5;

Greg: “So your Engineering course gives you a professional background then hopefully from that you would like to go on to develop your own business.

Interviewee: Yeah” **Case 5**

There were comments on the need for more business units in engineering courses in relation to such future plans.

There is a link between international students coming to study in Australia and a desire to gain permanent residence. Of the interview sample, five (23%) raised this as a long term goal at the conclusion of their studies. All these students were studying at the University of Tasmania. International students studying in regional areas (including Tasmania) gain additional points on the migration skills test for having completed a course of study for at least two years in a regional area. Some students at interview explained their choice of courses as being

predicated on a 'trial and error' approach because of no clear career plan. Case 6 admitted as much in her interview (p.189).

There was a much higher knowledge amongst the interview sample about credit-transfer compared to the questionnaire sample (77% compared to 51%). The most common source of knowledge about this for both samples was the course advisor. There was a considerable difference between the questionnaire and interview samples with respect to researching the recognition of their course (52.7% compared to 77.3%) and there was a greater clarity among undergraduate compared to postgraduate students on this question.

Practicums appeared to be an issue from some students at interview. For those that had experienced them, there were comments about the way in which they were organised, especially where students had to undertake most of the organisation themselves but did not have a network to do this in Australia and lacked connections to set this up in their home country (interview Cases 15 and 6). Some other students who did not have practicums linked to their course felt that they would be a potentially useful adjunct to their studies (interview Case 6).

In terms of the professional experience offered to Utas students it is programmed into their third year. The School of Engineering staff offer to arrange placements as a service to students although students can find a placement themselves, if they wish. One advantage of the School offering this service is that they act as a broker and arrangements are made with prospective employers in such a way that they are sent a short-list of possible internees rather than a number of students independently approaching individual employers. The Student Liaison Officer arranges to get CVs from students and sends these to three companies. Sometimes it is more convenient for students to arrange their placement overseas, usually because of the timing of the possible placement period and events such as Chinese New Year. In addition to acting as a broker for arranging

placements the School also organises tutorials in interview skills simulation or mock interviews. The School maintains that international students should receive as much opportunity as everyone else in securing a placement.

There are a variety of ways that international students access careers advice at their current institutions. Some did this through visit programs from professional institutes (as outlined by Cases 19, 20 and 22). Other did this through the career office, faculty office or the international office. Despite this, 41 percent of the interview sample had yet to access any advice from anyone at their current institution. There are implications for lecturers and teachers in terms of comments at interview from Case 9 (p. 199) and Case 15 whose intended career was in doubt (p. 204). This occurred in part because this student believed that lecturers and teachers were not fully aware of the needs and concerns of these students, as a significant part of the total student population. Issues associated with cultural awareness have also been identified by (Krause et al., 2005, p. 76) based on a survey of students in 2004.

6.2.4 EQUITY TARGETS

Are equity targets in say the Science, IT and Engineering fields of study being skewed by international fee-paying students being attracted disproportionately to particular fields of study? The answer is 'yes'. These targets are potentially in doubt when the numbers of international students are so significant in these broad fields of study and have a gender bias towards males. AEI should consider the publication of both current gender and age data in order to assist member institutions better plan and market their programs, curriculum development and delivery modes in relation to courses in broad fields of study.

For the overall international student population in Australia in 2003 there were more males than females (Table 4.3-7). This was not surprising given the female participation rate in some of the major source countries

(especially in higher education). Many of these rates were low in comparison to that of the OECD mean, and reflect the female participation rates for foreign students in a number of OECD English speaking countries (Table 5.6-1).

6.2.5 SURVEY INSTRUMENT

The questionnaire has proven to be a useful tool and could be customised to be used with specific cohorts of students at institutions to provide an avenue for collecting local knowledge and data. One additional item which could be added is a question about combined degrees. It was found that a number of students were doing such courses and responses to a question about combined degrees may have provided the opportunity for a greater clarity of answers in relation to other questions.

6.3 MODELS OF DELIVERY – CAREER PROVISION TO INTERNATIONAL STUDENTS – UPDATED SINCE THE DISTRIBUTION OF THE QUESTIONNAIRE

6.3.1 CANBERRA

No immediate change in the existing provision is planned.

6.3.2 CURTIN

The provision of career information occurs mainly via web resources using the Online Access Student Information Services (OASIS) portal and also includes graduate jobs listing at the link <http://careers.curtin.edu.au/>. There was a participation in 2005 in a virtual career expo promoted at www.vcf.gradlink.edu.au . This was built on national Gradlink materials.

Work has begun on a new strategic direction in the provision of career information to students (including international students). As an initial phase of this direction an international counsellor has been assigned to work with the careers consultant. Both roles are situated in Curtinhub (a

centre of a range of support services for students) along with other support staff.

Current promotional material for the Division of Engineering, Science and Computing has a strong link with careers by raising an awareness of career outcomes in relation to particular courses. The material (Curtin University of Technology, 2005) incorporates Professional Careers as part of its title. The development of the Curtin Advantage program and its organisation along company lines offers great potential for engaging international students in a simulated company environment. This program can aid a students understanding of working life and the relevance of their course to their intended career objectives. One aspect of confusion with regard to the term *career* at Curtin is that it is used in the context of entry level marketing into undergraduate courses across Divisions for all prospective students.

6.3.3 MONASH

Current undergraduate and postgraduate course guide material Monash University (2005b) , (2005a) have tables outlining careers and linking them to relevant courses in the booklet. In March 2005 a career counsellor position was established to exclusively serve the needs of international students based at Caulfield and Clayton campuses. It is intended in the near future to offer a careers fair for international students drawing on overseas employers.

6.3.4 TASMANIA

The university has a Career Development and Employment Service. The CDES uses a cascade model of service delivery as an underlying strategy of the service provision of careers to students. The Careerhub website <http://careerhub.utas.edu.au/> was established in 2004. The Science and Engineering faculty is the biggest user of the site.

Careers Week in 2004 was expanded considerably compared to the previous provision by packaging a careers fair, law fair and timing employer visits to coincide with this. A number of workshops and seminar sessions were also offered in conjunction with the week.

A range of course guides are produced for intending international students for different faculties or parts of faculties. Those for Computing (University of Tasmania, 2005a) and Engineering (University of Tasmania, 2005b) have an emphasis on articulation and professional recognition, and also include alumni profiles but do not explicitly refer to potential careers. The course guide for Science (University of Tasmania, 2004) focuses on the availability of courses and does not have a reference to articulation, alumni profiles or possible future careers. Additional brochures are produced to cover the various Schools in the Sciences and they include some of this information.

6.3.5 TAFE TASMANIA

The current course guide for international students (Department of Economic Development, 2005) incorporates a section on ‘Choosing your career path with Certificate, Diploma and Advanced Diploma programmes’. Apart from this the career provision outlined for TAFE Tasmania in Chapter 5 still applies.

6.3.6 SA GOVERNMENT SCHOOLS

There has been recognition since 2003 that international students usually access their final results over the internet during the Christmas period but then there is a delay before letters of offers arrive for university places into courses for the following year. The students usually receive letters of offers for courses that they have applied for, but they and their parents are usually not able to interpret the results and make informed judgements about which letter of offer to accept. As a consequence of this a counselling service has been created. This aims to put in place a process to improve the understanding that students and their parents have

about the results gained on the SACE, to enable them to accept the most appropriate letter of offer for continuance with their studies.

At Adelaide High School a mentoring program has been established involving staff to support international students who are at risk. The student 'at risk' is assigned to a particular staff member for support. For Charles Campbell Secondary School a restructuring of the Work Education program now gives a greater emphasis to assisting students with course selection. It is estimated that up to 30 percent of international students might change subjects (Makris, 2005) because they might initially enrol in subjects they do not understand. The new process assists them with understanding tertiary entrance requirements (TE scores) and the university courses they might be able to enter.

6.4 ANSWERS TO THE RESEARCH QUESTIONS

What factors contribute to the success or otherwise of international students in their studies in Science and Engineering?

From the student interviews we are aware of the varying factors that helped students determine why they undertook to study courses in Science and Engineering. Table 4.23 outlines that the two most important factors were interest in the subject field, and family or friends. From the questionnaire responses to questions 10, 14 and 26 there was an attempt to gauge how successful students might be in their studies. Tables 8.15 and 8.29 outlined the results to questions 14 and 26. For students enrolled in the current course, 86 percent concluded that their result would be satisfactory or better.

Are there factors and decisions taken by students which determine success in studying a Science and /or Engineering pathway and are these different from other pathways?

Data from AEI has been discussed that highlights that the growth in numbers of students studying Engineering has shown a steady increase and for Science there has been a substantial increase (especially in elective and cross disciplinary areas). Whilst items were put in the questionnaire and at interview to explore this issue I am unable to conclude whether there are any particular factors pertaining to Science and Engineering, as distinct from other pathways, that might assist students to be successful. The issue raised by those students transferring from offshore to onshore programs where English language was still perceived as the major concern were also found in a New Zealand study to have the greatest impact on students' likelihood of success:

“All respondents, across the curriculum, believed there was a strong relationship between students' English language skills and their success”. (McCallum, 2004, p. 37) I would not disagree with this conclusion given the results gained in the present study.

What do international fee-paying students understand about the Australian education and training system and in particular entry procedure into Science and /or Engineering?

Knowledge of the structure and transition through the Australian education and training system was tested in the questionnaire; question 9a, 11a and 11b (for students moving offshore to onshore programs), question 19 (credit-transfer) and 27 (recognition of the course by professional bodies). The results for these questions are given in Tables 4.4, Appendix 8.13 and 8.30. For both credit-transfer and the recognition of the current course by a professional body in the home country only just over half the sample responded positively (51% and 52.7% respectively).

What relationships are there between studying Science and Engineering course and career intentions?

One significant aspect to the results from the questionnaire was that 29 percent of the sample (determined by responses to question 12) had only just moved into the Science and Engineering field of study in their current course. Despite a lack of career advice in their home country before arriving in Australia the majority of students were able to give a career relating to the subject field. It appears that some Engineering students study their course in order to obtain a professional qualification before engaging in a wider business endeavour. A number of students accessed careers information at their current institutions. Only a relatively small number of students (given the lack of careers advice from the home country) appear to change their minds about their career intention.

6.5 IMPLICATIONS

6.5.1 FOR AUSTRALIAN EDUCATION INTERNATIONAL

- Statistics should be made available by broad fields of study and gender to allow institutions to better gauge gender participation in their own courses compared to that at comparable institutions.
- Access for research to the AEI online services could be improved (especially to obtain statistics).
- In using study pathways AEI could work more closely with other key partners and institutions towards a more consistent use of terminology. Maybe some terms will need to be modified for particular markets, especially given the results of this study that only 51 percent of the sample could explain the meaning of the term credit-transfer and 52.7 percent had conducted research into the recognition of their course.
- An audit of publications and websites needs to be undertaken by AEI to redress the inconsistency of terminology outlined above.
- Support and partnerships should be developed to examine wider issues involving international education, especially the impact on the wider education and training population, and on cultural

understandings. Here the model of wider industry research in New Zealand by Export Education New Zealand could be used.

- Data collection dissemination could be improved. Whilst the reliability of Australian data is probably better than for any other country because of the PRISMS system, some of this data is only available to industry subscribers. Ways should be examined to make such data more easily available for researchers.

6.5.2 FOR GCCA

There would appear to be scope for some existing publications to be customised for international fee paying students.

Whilst publications are disseminated in the careers offices of institutions, especially universities, they do not appear to be readily available in international student offices.

There is the need to adopt a more consistent approach to the term *career pathways* across publications.

6.5.3 FOR GOVERNMENT POLICY

6.5.3.1 DEST

Further research needs to be undertaken on the link between international fee-paying students selecting Australia as a destination and the potential of obtaining permanent residence to settle eventually in Australia. Such research could build on the findings in this study and respond to the questions raised by (Krause et al., 2005) in their study of the changing experiences of first year Australian university students over the last decade. A study (Birrell, 2005) along these lines is currently being undertaken. This could be the forerunner of a series that might examine the link between migration intake and students' study aspirations. Such studies would also appear to relate to projects involving an examination of skill shortages and the perceived mismatch of students' interest,

specific industries skill shortages and “the problem of high wastage in training”(Alcorso & Gilling, 2005, p. 30).

Further liaison should occur with DIMIA about the possible consequences of proposed visa changes (that occur from time to time) on the international education industry in Australia.

6.5.3.2 *DIMIA*

Migration policy has had the unintended consequences of determining course selection of international students with the change of the points test for skills assessment requirements about three years ago. Changes in policy such as the points test (refer p. 27), whilst they might include provision for a twelve months sunset clause, do not fully cater for international students who might have embarked on a three year undergraduate program based on government policy at the time of the commencement of their course. Further consideration could be given, and appropriate transitional times built into such policy changes.

It is suggested that DIMIA improve its consultation with the education and training system when reviewing visa guidelines. The introduction of IELTS tests for Assessment Level 4 countries (e.g. PRC) has currently had an adverse effect on the schools sector, but appears to have benefited student participation in Foundation Studies courses.

6.5.4 **FOR INSTITUTIONS**

As a consequence of the findings of the numbers of international students in this study not having had careers advice before arriving in Australia, is our current career services support appropriate for international fee-paying students to attain their intended career? Marketing and admissions staffs need to be made aware of these findings. Professional development needs to be made available to such staff to prepare them to ask appropriate questions at the time of application and/or admissions about a

student's career intention and to see how well their intended course may match this.

The OECD report on transnational education (OECD - Centre for Educational Research and Innovation, 2004) suggests employment outcomes are going to become increasingly more important to institutions in both maintaining the quality of their programs and also in continuing to maintain their viability. Institutions may wish to review their current practices and processes with regards to careers and international students.

The way in which the careers office or counsellors first make contact with international students may need to be reviewed in the light of what Ang (2001) describes as “extending the hand of friendship when they first arrive” (p. 133) to become part of their relationship network rather than just the giver of information. This would also acknowledge that international fee-paying students tend to be older (on average), than domestic students (Table 4.3-9) at the comparable stage of their studies.

The findings of this study in relation to students' understandings of credit-transfer, and the limited research undertaken by students into recognition of their course may also have implications for the way institutions attempt to explain the structure of the Australian education and training system. Institutions may need to collaborate with AEI and other relevant bodies (including regional marketing organizations) to address this. There is also the need for institutions to be more aware of the impact of migration policy changes on student participation in courses. Given the increased significance and development of offshore programs, and the concerns highlighted by students in this study in relation to English, institutions may need to examine in more detail how students can effect a 'seamless' transfer onshore without being unduly disadvantaged.

Given the findings of this study, that males rather than females are more likely to have accessed career information in their home country and that males rather than females are more likely to have availed themselves of career advice at their current institutions in Australia, consideration may need to be given to how career programs at institutions could be accessed more readily by female international fee-paying students. This finding is even more portent given that the sample is drawn from students studying Science and Engineering, fields dominated by male enrolments.

6.5.5 FOR PROFESSIONAL BODIES

Engineers Australia may need to revisit its existing requirement for a 12 week *professional exposure* for engineering students and discuss with institutions the manner of delivery of such a program and how this can be done to accommodate the circumstances of international fee-paying students.

For other professional bodies associated with this study (Appendix 5), international students have indicated (especially at interview) that they appreciate the support and information given to them to develop their knowledge about potential careers in Science and/or Engineering. Any additional endeavours or the development of new programs along these lines would be welcomed by them. Whilst the professional bodies may wish to reflect on their continued participation in providing such programs, they can be contributing to the emergence of the Australian Blueprint for Career Development.

6.5.6 FOR STUDENTS

The recent report from the OECD on careers (OECD, 2004a) suggests by implication, that students should take a greater degree of responsibility for ‘mapping their own career’. The report highlights that “too often career information is provider driven rather than user driven” (p. 83). It also highlights “the need for more market research on people’s career guidance needs” (p.128) and suggests that in policies for schools career

programs should take “a broader approach that also tries to develop career self-management skills” (p. 8). Certainly some of the existing publications and support structures should be examined to see how readily available they are to international students.

The NLC could disseminate information to students on the structure of the Australian education and training system, especially in relation to moving between the various sectors and where to seek further advice.

6.6 LIMITATIONS

The study is limited by the sampling, the instrumentation and the data analysis procedure. It was not practicable to undertake a large scale survey given that the total international fee-paying enrolment in 2003 was in excess of 303,000.

Despite extensive consultations with professional bodies and institutions to obtain permission to distribute questionnaires there were limited completed questionnaire responses from some sectors, especially the ELICOS and VET sectors. In the case of the VET sector permission was gained from an appropriate number of institutions to circulate questionnaires, but it was dependent upon student interest and willingness to complete and return them. Despite this a number of students included in the sample had previously been enrolled in VET and Foundation Studies courses. Across the higher education sector the response rate from universities was uneven (Canberra, n = 2). Despite approaches to institutions in New South Wales and Queensland (states with large international student numbers) no institutions agreed to participate in the study.

The survey sample was accessed through approaching onshore institutions registered on CRICOS that were ranked as having significant numbers of students in the Science and Engineering field (Appendix 9 Table 9-45) and therefore it was not possible to track students from

offshore to onshore situations. Likewise it was not intended to track all students over the length of their course and therefore the study does not allow for the completion of the qualification being undertaken by students. To have surveyed students from offshore settings would have involved approaching students outside the definition of an 'international fee-paying student'.

The Science and Engineering field was selected because it was assumed that students studying courses in these fields would have more vocationally related career intentions. Students' career intentions are determined at different times and for different reasons and constantly change. This research study invariably reflects the varying knowledge, skills and backgrounds of students' commitment to making career decisions. There were limitations in the study in terms of conveying to students what was meant by careers advice in the questionnaire. This matter was addressed in the interviews conducted with students. There was a consideration of the possible varying cultural construct of the meaning of careers and the issues outlined by Ang (2001) and others.

An analysis of the Science and Engineering career pathway in relation to any other pathway is limited to one of a statistical nature derived from AEI and other data. The interpretation of time sequence data was inherently limited by definition change and changes in the manner of collection of the data (Appendix 8). It was not feasible to conduct surveys across other career pathways. There were issues involving collating, interpreting and recording data across nine institutions. Statistical analysis was difficult where responses were constrained by a small population size and limited interpretation of some questions on the Survey instrument, and as a consequence some responses had to be combined for analysis (to address cell frequencies).

There were also difficulties in the recording and interpreting data especially in relation to school career background when some students

were recalling details from two years ago and others nearly a decade ago. This was particularly the case when assessing the comparability of grade levels when the questionnaire sample was derived from 23 countries reflecting the diversity of education systems (some more closer to our own and others quite distinct in nature).

6.7 SIGNIFICANCE OF THIS STUDY

This study will be of interest to education providers, policy makers, institutions and their International and Careers Offices, international students, educational authorities in home countries, researchers of intercultural acculturation, and transnational education.

The literature base has been extended by an examination of international fee-paying students in an Australia context. This study has considered *career pathways*, specifically in relation to the subject fields of Science and Engineering, and international students and in doing so, the study has explored a number of aspects of the globalisation of education. The cross sectoral nature of the study has resulted in the identification of a number of common themes and the metaphor of *career pathways* has provided a 'lens' in which to view these themes. In relation to the research gaps identified by (Patton, 2001b) this study has in part addressed some of those gaps: by recording "personal career management" (3); discussing "cross-national mobility" (4); advanced a discussion about "types of support services" (6); involving stakeholders "players" as part of the discussion (8); reflecting on "career education pathway experiences" (11); and recording the "views of students" (14) (p 4-5).

There are a number of implications of this study for other studies of international or transnational education. In attempting to answer the research questions posed, several other questions have arisen which require further research and examination.

The new dimensions of research covered by this study provide a significant departure to previous studies by integrating an examination of international education with that of career education. In addition the participatory methodology assisted international students to refine their understanding of *career pathways* and their career goals and intentions.

6.8 FURTHER RESEARCH

6.8.1 LONGITUDINAL STUDIES

Previous studies have tended to focus on satisfaction with courses (Australian International Education Foundation, 1998b) rather than on movements of students through the education and training system. There would appear to be considerable scope to build on the findings of this study. Longitudinal studies or ‘snap shot’ studies similar to that undertaken in (Krause et al., 2005) examining the movement of international students offshore to offshore programs and cohorts of students moving through the various sectors, need to be undertaken to examine the impact of the wider Australian student population and to measure the effects on international students themselves. Such studies could continue to examine the linkages between courses and employment outcomes, especially pathway completion.

Additional studies could be conducted to examine the emerging impact of career provision in major offshore source countries of international students to Australia, especially in Asia, given the variety of educational reforms in these countries. The proportion of Science and Engineering students taking up these studies without a background in this field would seem to require that further investigation into the role of prerequisites and their interplay in student success could be investigated.

6.8.2 STUDENT PARTICIPATION IN STUDIES OVER TIME

Whilst Athanasou (2002) points to the inherent difficulties of conducting longitudinal studies and the potential ‘drop off rate’ of participants (n =

1,201). His findings of the vocational interests of Australian high school students were that “approximately 21 % remained in identical vocational categories [as initially assessed] and 7 years later; this was significantly less than expected” (p. 83). There would appear to be a number of aspects relating to this study that could be measured through longitudinal studies given that international students represent one in five enrolments everywhere in the Australian education and training system.

6.8.3 PROVISION OF CAREER SERVICES TO INTERNATIONAL STUDENTS

Further work needs to continue on what is an appropriate provision of career services for international students. Previously there has been a benchmarking study conducted into international offices of universities which has identified indicators for best practice (Irvine, 1997). This present study underscores a breadth of existing career provision and support available to international students. A number of possible principles have emerged in this study which could be the basis of such a provision.

Students taking responsibility for their own career planning

This is suggested by the OECD report (OECD, 2004a). This is also recognition of the numbers of different careers that students might expect to have across their lifetime. In addition (Department of Education Science and Training, 2005c) points to the need for young people to have “... resilience and initiative to help them learn, plan and manage their careers effectively” p.1. While (McMahon et al., 2003) argue that such a focus will assist individuals to “[develop] skills that enhance current performance and equip [them] for the next employment experience” (p. 5).

The nature of the relationship needs to change between the careers office and counsellors with international students, including reviewing the method of approach.

Ang (2001) points to the need to establish a relationship network in a cross cultural context, rather than allowing the link to be viewed as one involving being the “giver of information” (p.133).

The availability of a comprehensive career program including at the time of enrolment, aspects of career management and the opportunity of recognising employability skills, and the continued development of links between students, employers and placement programs aimed at and supporting possible successful transitions.

(OECD, 2004a) points to the need for a full range of programs. Institutions could review the existing nature of their career service for international students and how appropriate these are for addressing each aspect outlined above. Such a review would recognise that the links with the labour market is becoming increasingly more complex for Australian students whilst for an international student these links are doubly complex in that they may participate in the Australian labour market while they are students as casual employees or an on practicum to complete their course. Through both, they are attempting to develop their employability skills to prepare them for the workforce in their home country when they eventually complete their Australian student visa.

A review of the nature of current career provision also reflects the changing nature of the concept of careers, how the nature of patterns of work will be different for students in the twenty first century, the demise of an individuals’ “...linear career progression through life” (McMahon et al., 2003) and the need to “... engage in repeated career decision-making and transition across the lifespan” (p. 9). International students themselves will increasingly be viewed as products of the globalisation

of the education and may become part of an increasingly mobile international workforce.

Professional qualifications and training for those staff in the roles of careers counsellors, international advisors or counsellors and/or admissions officers.

Work is currently being undertaken by ISANA in this context for international advisors/counsellors, and Career Industry Council of Australia (CICA) for careers professionals. ISANA through its Training Research and Consultancy Services (TRaCS) currently has six modules available to be delivered to staff through workshops. Details of these are available at <http://www.isana.org.au/>. In the case of CICA a number of background papers were disseminated in July 2005 in relation to the National Standards and Accreditation of Career Practitioners Project. These are available at <http://www.cica.org.au/>. Institutions should take the development of these industry accreditation standards as an opportunity to review the entry level qualification and the professional learning of the staff they deploy in this area.

Review delivery mechanisms, organisational structures and maximise collaboration

Institutions with International Offices and Career Offices should review the existing arrangements between the two areas to explore how they might more effectively support international students and provide them with careers advice, support and access to programs that might assist them with access to potential employers. This study has reported on the provision of nine institutions. Models of service provision to international students vary from those that are more centralised to some incorporating elements of outsourcing. Such a review should also reflect the organisational changes occurring in the workforce and build on the Australian Blueprint for Career Development. The emergence of the

blueprint itself is seen as “... a means of mapping, unifying and coordinating service provision.” (McMahon et al., 2003)

6.9 SUMMARY AND CONCLUDING REMARKS

This study has found that a significant number of the international students surveyed had not received career education before arriving in Australia. For those students studying a course in Science and Engineering this does not seem to have had an undue impact on their intended career. A number of students gained knowledge about careers whilst enrolled in their Australian institution, an event that in part reflects the traditional view in career education that students have to be in a position to make a significant career decision before careers become relevant to them. Many students in this study had previous exposure to other sectors of the Australian education and training systems, however in measuring the students’ structural knowledge of the system the term *credit-transfer* was used and just over half the sample understood the meaning of this term.

The term *career pathway* has been used as a metaphor in this study to describe the entry points at which students commence their studies and how students move between sectors and levels to their chosen career. The study has considered career pathways in terms of a sizable international fee-paying enrolment. The discussion relates specifically to students enrolled at nine institutions across schools, VET, undergraduate and postgraduate studies, in the context of Engineering and Science courses. The study has produced a number of important results but it also raises further questions and issues that may need to be addressed in future studies.

This study has been informed by the various professional roles I have held as a teacher, Assistant Principal, the Principal Curriculum Officer responsible for Career and Work Education for the Tasmanian Department of Education for seven years and Manager of the

International section of the same Department for a further five years. Concurrent with the latter role I was the registrar responsible for registering institutions and courses on CRICOS in Tasmania. In this position I was a member of the committee that drafted the National Code that augmented the ESOS Act 2000. As PCO for Career and Work Education I was interviewed by Lynne Bezanson and Tony Watts (Consultants from the OECD) on the Tasmanian input to the OECD - Australian Country Notes (Department of Education Science and Technology, 2002a). Also I am qualified and practise as a migration agent, and as such one of the client groups I regularly assist are international students in Australia applying for Permanent Residence.

6.10 PERSONAL REFLECTIONS

At a personal level one aspect of having international fee-paying students in Australia and in Tasmania is how this endeavour is one way to increase the internationalisation of education for local students. Culturally and educationally students are the 'richer' for this experience. Hopefully the international students who study in Australia have gained an appreciation of Australia culture and society whilst they have been here. Thank you to all the international students who have contributed to my own increased cross-cultural understanding and in particular to the 110 students, nine education institutions (from five states and territories) who participated in this study.

REFERENCES

- Albrecht, J. (2004). University to TAFE: Recognising Higher Education on the Lifelong Learning Pathway. *Professional Educator*, 3(2), 8 - 9. Retrieved: May 2004, from
- Albrecht, J. (2004, January 28, 2004). *University to TAFE*. Newcastle: Hunter Institute - TAFE NSW. Retrieved: January 17, 2005, from <http://www.tda.edu.au/AVETRA%20Winner%202003.pdf>
- Alcorso, C., & Gilling, J. (2005). Going Holistic Over Skills. *HRMonthly*(August), 30 - 31. Retrieved: 2005, from
- Andressen, C. (1997). The Location and Characteristics of Asia - born Overseas Students in Australia. In J. E. Coughlan & D. J. McNamara (Eds.), *Asians in Australia - Patterns of Migration and Settlement*. Melbourne: Macmillan Education Australia.
- Ang, J. (2001). *Harnessing the Power*. Paper presented at the ISANA 12th National Conference, Fremantle WA.
- AQF Advisory Board (2002, August 9, 2002). *Australian Qualification Framework*. Melbourne: AQF Advisory Board. Retrieved: January 18, 2005, from <http://www.aqf.edu.au/aboutaqf.htm>
- AQF Advisory Board (2002, August 9, 2002). *Australian Qualification Framework - Pathways Taken by International Students*. Melbourne: AQF Advisory Board. Retrieved: January 3, 2005, from http://www.aqf.edu.au/case_int.htm
- Ashenden, D., & Milligan, S. (2001). *The Age - The Good Universities Guide 2002 Edition* (2002 ed.). Melbourne: Hobsons Australia.
- Asia Education Foundation. (1995). *Studies of Asia : A Statement for Australian Schools*. Carlton: Curriculum Corporation.
- Association of International Education Exchange. (1995). *Research on the Actual Condition of Internationalisation on Education in 1994 in Senior High School*, Tokyo: Association of International Educational Exchange. Retrieved: October - December 1995,
- Athanasou, J. A. (2002). Vocational Pathways in the Early Part of a Career: An Australian Study. *The Career Development Quarterly*, 51(1), 78 - 86. Retrieved: September 2002, from
- Australian Bureau of Statistics (2004, December 23 2004). *Yearbook Australia*. Canberra: Australian Bureau of Statistics. Retrieved: March 7 2005, from <http://www.abs.gov.au/Ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/cd28ee1870dacabcca256dea000539c4!OpenDocument>
- Australian Bureau of Statistics (2004). *Population - International Migration*. Canberra: Australian Bureau of Statistics. Retrieved: May 30, 2005, from <http://www.abs.gov.au/ausstats/abs@.nsf/94713ad445ff1425ca25682000192af2/12a5e16d0d30a693ca256dea000539ad!OpenDocument>
- Australian Council of Deans of Science (1999). *Who is Studying Science*. Melbourne: Australian Council of Deans of Science. Retrieved: August 7, 2005, from <http://www.acds.edu.au/>
- Australian Council of Deans of Science (2001). *Why Do a Science Degree?* Melbourne: Australian Council of Deans of Science. Retrieved: August 7, 2005, from <http://www.acds.edu.au/>

- Australian Education Council. (1991). *Young Peoples' Participation in Post - Compulsory Education and Training*, Canberra: Australian Government Publishing Service.
- Australian Education Council. (1992). *Career Education in Australian Schools : National Goals , Student , School and System Outcomes and Evaluative Arrangements*. Melbourne: Curriculum Corporation.
- Australian Education Council / Ministers of Vocational Education , E. a. T. (1992). *Key Competencies : Report of the Committee to Advise the Australian Education Council and Ministers of Vocational Education , Employment & Training on Employment - Related Key Competencies for Post Secondary Education and Training*, Canberra: Australian Education Council / Ministers of Vocational Education , Employment and Training.
- Australian Education International. (1999). *Overseas Student Statistics 1998*. Canberra: Department of Education, Training and Youth Affairs.
- Australian Education International. (2001). *Overseas Student Statistics 2000*. Canberra: Department of Education , Science and Training.
- Australian Education International. (2001). *Australian Qualifications Framework*. Canberra: AEI.
- Australian Education International (2004, December 25, 2004). *Step 1 Study Planning*. Canberra: AEI. Retrieved: January 22, 2005, from <http://www.studyinaustralia.gov.au/Sia/en/WhatToStudy/Step1.htm>
- Australian Education International (2004, April 23, 2004). *AEI Websearch Site*. Canberra: Australian Education International. Retrieved: January 22, 2005, from <http://aei.dest.gov.au/AEI/Search.htm?key=pathways>
- Australian Education International (2004). *International Student Enrolments in Australia 1994-2003*. Canberra: Australian Education International. Retrieved: March 5, 2005, from http://aei.dest.gov.au/AEI/MIP/Statistics/StudentEnrolmentAndVisaStatistics/Recent_TableC_pdf.pdf
- Australian Education International (2004). *Data collection from the AEI Member Website*. Canberra: Australian Education International. Retrieved: May 18, 2005, from <https://aei.dest.gov.au/AEI/CmsTemplates/GeneralTemplates/ContentPage.aspx?NRMODE=Published&NRORIGINALURL=%2fAEI%2fMIP%2fStatistics%2fStudentEnrolmentAndVisaStatistics%2f2004%2fDefault%2ehtm&NRNODEGUID=%7b6A296A86-251E-444D-9E40-4A7AAA5F76F2%7d&NRCACHEHINT=ModifyLoggedIn&RetrieveFormId=18351>
- Australian Education International. (2004). *Australian Qualifications and the Australian Qualifications Framework*. Canberra: Australian Education International.
- Australian Education International (2005). *Study Pathways of International Students in Australia*. Canberra: Australian Education International. Retrieved: June 25, 2005, from http://aei.dest.gov.au/AEI/MIP/ItemsOfInterest/05Interest34_pdf.pdf
- Australian Education International (2005). *Research Snapshot Number 1*. Canberra: Australian Education International. Retrieved: August 3, 2005, from http://aei.dest.gov.au/AEI/PublicationsAndResearch/Snapshots/01SS05_pdf.pdf

- Australian International Education Foundation. (1996). *International Students Who Choose Not to Study in Australia - An Examination of Taiwan and Indonesia*. Canberra: Australian International Educational Foundation.
- Australian International Education Foundation. (1998). *Survey of International Students Studying in Australia -1997*. Canberra: Australian Government Publishing Service.
- Australian International Education Foundation (1998). *Australian Studies Off Shore Project*. Canberra: Schools Tasmania. Retrieved: September 17, 1998, from <http://www.ec.tased.edu.au/sos>
- Australian International Educational Foundation. (1998). *International Skills for Young Australians*. Canberra: Australian International Educational Foundation.
- Australian National Training Authority (2005). *Australian Training Quality Framework - Standards for State and Territory Registering / Course Accrediting Bodies*. Brisbane: Australian National Training Authority, from http://www.anta.gov.au/images/publications/AQTF_2005_STA_standards.pdf
- Australian National Training Authority (2005). *Australian Training Qualification Framework - Standards for Registered Training Organisations*. Brisbane: Australian National Training Authority, from http://www.anta.gov.au/images/publications/AQTF_2005_RTO_standards.pdf
- Australian Vice - Chancellors' Committee (2002). *Universities and Their Students: Principles for the Provision of Education by Australian Universities*. Australian Vice - Chancellors' Committee. Retrieved: January 17, 2005, from http://www.avcc.edu.au/documents/publications/Principles_final_Dec02.pdf
- Australian Vice - Chancellors' Committee (2003, May 2003). *Offshore Programs of Australian Universities*. Canberra: Australian Vice- Chancellors' Committee. Retrieved: May 25, 2005, from http://www.avcc.edu.au/documents/policies_programs/international/activities/Offshore%20Programs%20-%20May%202003.pdf
- Australian Vice Chancellors' Committee. (2000). *International Relations - Strategic Plan, Triennium 2000 - 2002*. Unpublished manuscript, Canberra.
- Australian Vice Chancellors' Committee (2003, May, 2003). *International Links of Australian Universities*. Canberra: AVCC. Retrieved: January 17, 2005, from http://www.avcc.edu.au/documents/policies_programs/international/activities/Formal%20Links%20-%20May%202003.pdf
- Australian Vice Chancellors' Committee (2003, April 2003). *International Education: The Facts*. Canberra: AVCC, from http://www.avcc.edu.au/documents/publications/facts/InternationalEducation_facts.pdf
- Australian Vice Chancellors' Committee (2005, January 2005). *Internationalisation*. Canberra: AVCC. Retrieved: January 17, 2005, from <http://www.avcc.edu.au/documents/publications/stats/International.pdf>
- Australian Vice Chancellors' Committee (2005). *Key Statistics - Students*. Canberra: Australian Vice Chancellors' Committee. Retrieved: March 5, 2005, 2005, from <http://www.avcc.edu.au/documents/publications/stats/Students.pdf>
- Bacani, C. (2001, May 18, 2001). I.T. Crunchtime. *Asiaweek*, 24 - 30.

- Baker, M., Robertson, F., Taylor, A., Doube, L., & Rhall, T. (1996). *The Labour Market Effects of Overseas Students*. Melbourne: Bureau of Immigration, Multicultural and Population Research.
- Bannerman, P., Spiller, J., Yetton, P., & Davis, J. (2005, May 2005). *Strategic Alliances in Education and Training Services - A Literature Review*. Canberra: Department of Education, Sciences and Training. Retrieved: May 25, 2005, from <http://aei.dest.gov.au/AEI/MIP/ItemsOfInterest/05Interest26.htm>
- Baumgart, N., & Halse, C. (1999). *Asian Education Foundation - National Evaluation of the Second Triennium*, Sydney: University of Western Sydney - Nepean, School of Lifelong Learning and Educational Change.
- Beazley, K. (1992). International Educational in Australia Through the 1990's. In *International Students Policy Handbook*. Canberra: Department of Employment, Education and Training, International Students Branch.
- Bezanson, L., & Kellett, R. (2001). *Integrating Career Information and Guidance Services at a Local Level*, Paris: OECD. Retrieved: November 2001, from <http://www.oecd.org/dataoecd/36/26/2698200.pdf>.
- Bird, E., & Welford, G. (1995). The Effect of Language on the Performance of Second Language Students in Science Examinations. *International Science of Education*, 17, 389 - 397.
- Birrell, B. (2005). *Study of International Students - Implications for Australia's Migration Program and Australia's Higher Education System*. Canberra: Department of Immigration and Multicultural and Indigenous Affairs. Retrieved: August 28, 2005, from <http://www.immi.gov.au/research/projects/economic/int-student.htm>
- Blackmore, J. (1999). *Framing the Issues for Educational Re - design, Learning Networks and Professional Activitism* (Vol. 25). Hawthorn: Deakin Centre for Education and Change.
- Blair, T. (1999, June 18, 1999). *Attracting More International Students*. London: 10 Downing Street. Retrieved: January 19, 2005, from <http://www.number-10.gov.uk/output/page3369.asp>
- Bohm, A. (2000, August 8 -11, 2000). *Transnational Education Providers, Partners and Policy Challenges for Australian Institutions Offshore*. Paper presented at the 14th IDP Australian International Education Conference, Brisbane.
- Boud, D. (Ed.). (1998). *Current Issues and New Agendas in Workplace Learning*. Adelaide: NCVER.
- Boud, D. (1999). Situating Academic Development in Professional Work: Using Peer Learning. *International Journal for Academic Development*, 4(1), 3-10.
- Boud, D., & Middleton, H. (2003). Learning from Others at Work: Communities of Practice and Informal Learning. *Journal of Workplace Learning*, 15(5), 194-202.
- British Council. (2005). *International Student Data for the UK*. London:(British Council).
- Brown, A., Moerkam, T., & Voncken, E. (1998). Facilitating Progression to Higher Education. In A. Brown & S. Manning (Eds.), *Qualifications for Employment and Higher Education : A Collaborative Investigation Across Europe* (pp. 77 - 98). Hämeenlinna: University of Tampere.
- Burgess, C. (2002). *The Asian Studies 'Crisis' : Putting Cultural Studies into Asian Studies and Asia into Cultural Studies*. Melbourne: School of Languages, Cultures, and Linguistics, Monash University. Retrieved: July 24, 2005, from

<http://www.arts.monash.edu.au/lcl/research/projects/culturalflowsmanifesto.pdf>

- Burrell, S. (2002). Skills Assessment Data for Permanent Residence by Source Institution [Unpublished data]. pp. Skill Visa Assessment Data). Sydney:(Australian Computer Society).
- Bushell, S. (1999, July 13,1999). World Wide Ed. *The Bulletin*, 90 - 92.
- Byrom, G. (1998). Business Studies for International Students. *Australian TAFE Teacher*, 32(12).
- Calvert, G. (1992). Finn, Mayer and Carmichael - A Background Summary. *Spectrum*, 2(5), 8 -11. Retrieved: September 1992, from
- Calvert, G. (1994). *Education and Vocational Provisions in England and Australia - Implications for the School Career Education Co-ordinator*.Unpublished manuscript, Hobart.
- Calvert, G. (2000). *International Education-New Directions in a New Millennium*. Paper presented at the The Second Conference on Science, Mathematics and Technology Education, Taipei, Taiwan.
- Calvert, G. (2002, 4-5 October, 2002). *Career Education Software and Test Systems / Products - An Outline Of Issues*. Paper presented at the Business Education - Innovative and Enterprising, BEA National Conference, Hobart.
- Calvert, G. (2002). Home and Away Blurring. *Directions in Education*, 11(11), 4. Retrieved: July 2002, from
- Calvert, G. (2003). *International education: the development of a survey instrument, implementation and evaluation*. Paper presented at the Third Conference on Science, Mathematics and Technology Education, East London, South Africa.
- Careers Centres at The Australian National University and Flinders University. (2004). *A Degree of Certainty - Career Options for Postgraduate Research Students*. Melbourne: Graduate Careers Council of Australia.
- Carlson, A. (2001). Towards a National Policy on International Education. *ISANA Newsletter*, 5(1). Retrieved: April 2001, from
- Carmichael, L. (1991). *Australian Vocational Certificate Training System*, Canberra: Employment and Skills Formation Council.
- CEAV, & Dusseldorp Skills Forum. (1997). *Career Education and Guidance for the Next Millennium*. Melbourne: Career Education Association of Victoria and Dusseldorp Skills Forum.
- CESCEO Working Party. (1995). *Report on the Place of Foundation Programs for International Students*, Melbourne: Conference of Education Systems Chief Executive Officers Working Party. Retrieved: December 5, 1995,
- Chalmers, D. (1994). Local and Overseas Students' Goals and Management of Study. *Issues in Educational Research*, 4(2), 25 - 56.
- Chan, J. 2005, personal communication, April 6, 2005,2005.
- Chan, J. 2005, personal communication, April 29, 2005,2005.
- Chen, Q. (1999, October 5-8, 1999). *The Quality of Australian Education : What do International Students' Experiences Tell?* Paper presented at the 13th Australian International Education Conference, Fremantle.
- Chen, W. (1998, August 31 - September 6). Qualification - for - Life Education: Ticket to 21st Century. *Beijing Review*, 8 - 10.
- Chrittenden, D. A. (2003). First Year Student Attrition Rate in Universities - Implications for Secondary Schools. *The Practising Administrator*, 25(4), 41 - 43.

- Clinton, W. J. (2000, April 20, 2000). *International Education Policy*. (Oklahoma City, Oklahoma): THE WHITE HOUSE Office of the Press Secretary, from <http://www.ed.gov/PressReleases/04-2000/wh-000419.html>
- Clough Linda 2005, personal communication, May 17, 2005,2005.
- Commons, K., & Gao, X. (2004). *Do Academic Orientations Make a Difference : a Preliminary Assessment*. Paper presented at the 15th ISANA International Conference, Melbourne.
- Commonwealth Department of Education. (1986). *Asian Studies Council - Reporting of the Working Party*, Canberra: Australian Government Publishing Service.
- Cooper, C. (2005). Peter Sheahan - Working with Gen Y. *Management Today*, 18 - 21. Retrieved: June 2005, from
- Council for Economic Planning and Development. (1997). *Plan for National Development into the Next Century - A Briefing*. Taipei: Executive Yuan, Republic of China.
- Curriculum Corporation. (2001). *Global Perspectives: A Statement on Global Education for Australian Schools*, Melbourne: Curriculum Corporation. Retrieved: May 2001,
- Curtin Malaysia Sdn Bhd (2005). *Curtin University of Technology Sarawak Malaysia*. Miri: Curtin Malaysia Sdn Bhd. Retrieved: June 26, 2005, from <http://www.curtin.edu.my/>
- Curtin University of Technology (2003). *Curtin University of Technology - Graduate Employment 2003*. Perth: Curtin University of Technology. Retrieved: May 6, 2005, from http://www.curtin.edu.au/curtin/dept/planstats/surveys/gds2003_book.pdf
- Curtin University of Technology. (2005). *Engineering, Science and Computing - Professional Careers [Brochures]*. Perth:(Curtin University of Technology).
- Davis, J. (2004). Reframing Science Education. *Directions in Education*, 13(15), 2-3. Retrieved: September 3, 2004, from
- de Almeida, M., Leite, M., & Woolnough, B. (1998). *Factors Affecting Students' choice of Science and Engineering in Portugal*, (ERIC - ED446940).
- Department of Economic Development. (2005). *Institute of TAFE Tasmania International Student Guide*. Hobart: Department of Economic Development.
- Department of Education (2003). *Career, Work and Enterprise - Issues Paper*. Hobart: Department of Education. Retrieved: July 12, 2005, from <http://www.education.tas.gov.au/stateoflearning/background/issuespapers/careerworkenterpriseissuespaper.doc>
- Department of Education (2003). *Career, Work and Enterprise Education Issues Paper*. Hobart: Department of Education - Office of Post-Compulsory Education and Training. Retrieved: August 7, 2005, from www.education.tas.gov.au/stateoflearning/background/issuespapers/
- Department of Education and Training (2004, May 2004). *HSC/TAFE Credit Transfer website*. Sydney: Department of Education and Training. Retrieved: January 17, 2005, from <https://www.det.nsw.edu.au/hscrafe/>
- Department of Education Science and Technology. (2002). *Australian Government Response to a National Questionnaire on Policies for Information, Guidance and Counselling Services*. Unpublished manuscript, Canberra.
- Department of Education Science and Technology (2002, May 2002). *Piloting the Real Game Series in Australia - A Summary of the Process*. Canberra: DEST. Retrieved: January 17, 2005, from <http://www.realgame.com/>; <http://www.realgame.ca/documents/AUStory.doc>

- Department of Education Science and Technology (2004, November 4, 2004). *The Real Game*. Canberra: DEST. Retrieved: January 17, 2005, from <http://www.realgame.dest.gov.au/index.htm>
- Department of Education Science and Technology (2004, September 10, 2004). *Building Our Future Through Science and Innovation*. Canberra: DEST. Retrieved: January 17, 2005, from <http://backingaus.innovation.gov.au/>
- Department of Education Science and Training (2005, February 21, 2005). *Students 2003 - Selected Higher Education Statistics*. Canberra: Department of Education, Science and Training. Retrieved: March 8, 2005, from http://www.dest.gov.au/highered/statistics/students/03/student_tables/tables.htm
- Department of Education Science and Training. (2005). *Australian Education International Industry Seminars 2005*. Canberra: Commonwealth of Australia.
- Department of Education Science and Training (2005, April, 2005). *A National Quality Strategy for Australian Transnational Education and Training - A Discussion Paper*. Canberra: Department of Education, Science and Training. Retrieved: May 10, 2005, from http://aei.dest.gov.au/AEI/GovernmentActivities/QAAustralianEducationAndTrainingSystem/QualStrat_pdf.pdf
- Department of Education Science and Training (2005). *AEI Industry Seminars - 2005*. Canberra: Australian Education International. Retrieved: May 31, 2005, from https://aei.dest.gov.au/AEI/Events/_IndustrySeminars2005/Default.htm
- Department of Education Science and Training (2005). *Ensuring Seamless Transitions from School to Work or Further Education*. Canberra: Department of Education Science and Training. Retrieved: August 28, 2005, from <http://nefs.dest.gov.au/transitions.htm>
- Department of Education Training and Employment. (2000). *Handbook for Managing the Overseas Student Program*. Adelaide: Department of Education, Training and Employment.
- Department of Education Training and Youth Affairs. (2001). *National Code of Practice for Registration Authorities and Providers of Education and Training to Overseas Students*. Canberra: Department of Education, Training and Youth Affairs.
- Department of Employment, E. a. T. (1992). *International Students Policy Handbook*. Canberra: Australian Government Publishing Service.
- Department of State Development. (2002). *The Institute of TAFE Tasmania International Course Guide*. Hobart: Department of State Development.
- Dobson, I. R. (2003). *Science at the Cross Roads: A Study of Trends in University Science from Dawkins to Now 1989 - 2002*, Melbourne: Australian Council of Deans of Science. Retrieved: October 2003,
- education.au Limited (2003, August 28, 2003). *myfuture - Australia's Career Information Service*. Adelaide: education.au Limited. Retrieved: January 21, 2005, from www.myfuture.edu.au
- Educational Programs Branch - DECCD. (1997). *Future Steps - Time to Think*. Hobart: Department of Education Community and Cultural Development.
- Educational Services for Overseas Students (Registration of Providers and Financial Regulation) Act, Act No.114,1991 (1991).
- Education Providers Registration (Overseas Students) Act, (1991).

- Education Services for Overseas Students (ESOS) Act 2000, (2000).
- Einarson, M. K., & Santiago, A. M. (1996, May 7, 1996). *Background Characteristics as Predictors of Academic Self - Confidence and Academic Self-Efficacy Among Graduate Science and Engineering Students: An Exploration of Gender and Ethnic Differences*. Paper presented at the 36th Annual Forum of the Association for Institutional Research, Albuquerque, New Mexico.
- Erskine, J. (2000). Surveying the UNIPREP Orientation Program at the University of New South Wales: The Beginning of the Transition Process into University. *Journal of the Australian and New Zealand Student Services Association*(16), 43 - 54. Retrieved: October 2000, from
- Fitzgibbon, J. (Ed.). (2003). *Advancing the National Interest*. Canberra: Department of Foreign Affairs and Trade.
- Follari, M. (2004, October 5 - 8, 2004). *Comparative Costs of Higher Education Courses - Update 2004*. Sydney: IDP Education Australia, from [http://www.cdesign.com.au/idp2004/powerpoint%20\(pdf\)/Thu%201100%20HMR3%20Follari.pdf](http://www.cdesign.com.au/idp2004/powerpoint%20(pdf)/Thu%201100%20HMR3%20Follari.pdf)
- Follari, M. (2004). *New Research: Costs of Study in Australia*. Sydney: IDP Australia. Retrieved: January 11, 2005, from <http://www.idp.com/mediacentre/2004/october/article1235.asp>
- Freebody, P. (2003). *Qualitative Research in Education: Interaction and Practice*. London: Sage Publications.
- Fullerton, T. (2005). *Background Interview for ABC TV 4 Corners Program 'The Degree Factories' broadcast June 27, 2005 with Dr B Nelson*. Sydney: Australian Broadcasting Corporation. Retrieved: July 3, 2005, from <http://www.abc.net.au/4corners/content/2005/s1399260.htm>
- Gallagher, M. (2002). *On the Cusp - A New Phase in the Internationalisation of Australian Education*. Unpublished manuscript, Hobart.
- Garnaut, R. (1989). *Australia and the Northeast Asian Ascendancy*, Canberra: Australian Government Publishing Service.
- Gradlink (2005). *Virtual Careers Fair*. Retrieved: May 15, 2005, from <http://www.vcf.gradlink.edu.au/home.aspx>
- Graduate Career Council of Australia. (2004). *Course Experience Questionnaire*, [1325-7528]. Melbourne: Graduate Career Council of Australia,.
- Graduate Career Council of Australia. (2004). *Graduate Destination Survey*, [1037 8553]. Melbourne: Graduate Career Council of Australia,.
- Graduate Career Council of Australia. (2004). *Graduate Starting Salaries*, [1030-7311]. Melbourne: Graduate Career Council of Australia,.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth Generation Evaluation*. Newbury Park: Sage Publications.
- Haas, A. R. (1999). *Trends in Articulation Arrangements for Technical and Vocational Education in the South East Asian Region*, Melbourne: RMIT University.
- Hacket, J. (1999). *Globalisation - transforming the provision of higher education - Quality, Technology and Alliances*. Paper presented at the 13th IDP Australian International Education Conference, Fremantle.
- Haines, C., Scott, K., & Lincoln, R. (2003). *Australian Blueprint for Career Development - Draft Prototype*, Perth: Miles Morgan Australia. Retrieved: July 2003.

- Halse, C., & Baumgart, N. (1996). International Education and Culture: Getting the Balance Right. *Unicorn*, 22(4), 39 - 48. Retrieved: December 1996, from
- Hamilton, S. (1998). *Setting the Foundations for the Internationalisation of Australian Higher Education*. Unpublished manuscript, Sydney.
- Harris, G. T., & Jarrett, F. (1990). *Educating Overseas Students in Australia: Who Benefits?* Sydney: Allen and Unwin.
- Harris, R., Sumner, R., & Rainey, L. (2005). *Student Traffic: Two-way Movement Between Vocational Education and Training and Higher Education*. Adelaide: NCVET.
- Harrison, I. (1998). *Linking Career Education and School Workplace Learning Pathways*. Melbourne: Career Education Association of Victoria.
- Harrold, R. (1990). *Marketing the Academy: Aspects of Exporting Higher Education Courses*, Canberra: Industry Commission. Retrieved: August 1990,
- Hawkins, K. G., & Bransgrove, T. G. (1998). International Students in Australian Universities. *Unicorn*, 24(1), 65 - 70. Retrieved: April, 1998, from
- Hellsten, M. (2002). *Students in Transition: Needs and Experiences of International Students in Australia*. Paper presented at the 16th Australian International Education Conference, Hobart.
- Heywood, A. (2004). *Careers for Information Technology Graduates*. Melbourne: Graduate Careers Council of Australia Limited.
- Hosking, K., & Allen, C. (2001). *Careers for Engineering Graduates*. Melbourne: Graduate Careers Council of Australia Limited.
- Hughes, C. (2002). *The Influence of Family Processes on Adolescents and Young Adult Career Development*. Paper presented at the AACC 11th National Conference, Melbourne.
- Hughes, P. (1995). Internationalisation of Education and Curricula for the Twenty - First Century. *Education Research and Perspectives*, 22(2), 1 - 16. Retrieved: December 1995, from
- IDP Education Australia (2004). *Education - Export Statistics*. IDP Education Australia, from <http://www.idp.com/marketingandresearch/research/statistics/article403.asp>
- IDP Education Australia (2004). *International Education in Australia*. IDP Education Australia, from <http://www.idp.com/marketingandresearch/research/fastfacts/article405.asp>
- IDP Education Australia (2004). *International Students in Australian Universities - Semester 2, 2004*. Sydney: IDP Education Australia. Retrieved: January 13, 2005, from http://www.idp.com/marketingandresearch/research/fastfacts/Semester%20Two%202004%20-%20Key%20Outcomes_Web.pdf
- IDP Education Australia (2004). *Students.idp.com - Career Path*. Sydney: IDP Education Australia. Retrieved: January 22, 2005, from <http://students.idp.com/english/aboutaustralia/article16.asp>
- Industry Commission. (1990). *Exports of Education Services Inquiry*, Canberra.
- Inkson, K., & Carr, S. C. (2004). International Talent Flow and Careers: An Australasian Perspective. *Australian Journal of Career Development*, 13(3), 23 - 28. Retrieved: Spring 2004, from
- Institute of International Education (2004, 2004). *Opendoors 2004 Fast Facts - International Students in the US*. New York: Institute of International Education. Retrieved: January 18, 2005, from <http://opendoors.iienetwork.org/?p=53867>

- International and Commercial Services - University of Tasmania. (1997). *Foundation Studies Program For International Students - Proposal to Admissions Policy Committee*, Hobart: University of Tasmania. Retrieved: September 1997,
- Irvine, I. (1997). *International Office - Benchmarking Survey Report*, Canberra: Australian International Education Foundation.
- ISANA : International Education Association (2005). *The Role of International Student Advising*. Brisbane: ISANA. Retrieved: June 19, 2005, from <http://www.isana.org.au/StudentAdvising.aspx?ParentPageId=37&u=4d28474f-4fa2-4135-a2ed-171bdcc5de7a>
- ISANA: International Education Association. (2002). ISANA Code of Ethics. pp. 4)(Brisbane).
- ISANA: International Education Association. (2004). *Annual Report 2004*, Brisbane: ISANA: International Education Association.
- Isero, H. (2001). Educational Reform in Japan - A Plan for the Rebirth of Education in the 21st Century. *National Institute for Educational Policy Research of Japan*, 33(2), 1 & 4. Retrieved: July 2001, from
- Jarvis, P. (2001). *Formula for Success in Career Building*. from <http://www.lifework.ca>
- Jarvis, P. (2003). *Career Management Paradigm Shift: Obscurity for Career Counsellors, or Center Stage?* Memramcook: National Life / Work Center, from <http://lifework.ca/A%20CONTACT%20POINT%2010-03.doc>
- Johnston, S. (2001). *Internationalisation of the Curriculum*. Unpublished manuscript, Hobart.
- Joint Standing Committee on Migration (2005). *Information Paper - Inquiry into Overseas Skills Recognition, Upgrading and Licensing*. Canberra: Parliament of Australia, from www.aph.gov.au/house/committee/mig/recognition/infopaper.pdf
- Jolley, A. (1997). *Exporting Education to Asia*. Melbourne: Victoria University of Technology.
- Jopson, D., & Burke, K. (2005, May 10, 2005). Unis' Overseas Failures Bleeding Millions. *The Sydney Morning Herald*, 1 and 6.
- Keating, J. (1994). *Education and Training - Some Reflections from Europe*. Canberra: Australian Government Publishing Service.
- Kell, P. (1997). Across Borders and States Globalising Education. *Education Australia*(36), 6 - 9. Retrieved: 1997, from
- Kennedy, K., Cummings, J., & Catts, R. (1993). *Vocational Education in Secondary Schools - A Review of the Literature*, Carlton: Curriculum Corporation. Retrieved: December 1993,
- Kirby, K. (2004). *Internationalising the School Curriculum: What is Essential for Australia?*, Melbourne: IARTV.
- Knight, J. (2003). *Internationalization of Higher Education - Practices and Priorities: 2003 IAU Survey Report*, Paris: International Associations of Universities.
- Krause, K.-L., Hartley, R., James, R., & McInnis, C. (2005). *The First Year Experience in Australian Universities: Findings From A Decade of National Studies*. Melbourne: Department of Education, Science and Training. Retrieved: June 18, 2005, from <http://www.cshe.unimelb.edu.au/downloads/FYEReport05KLLK.pdf>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size For Research Activities. *Educational and Psychological Measurement*, 30, 607 - 610.

- Lane, E. O., Dietz, J. S., Chompalov, I., Bozeman, B., & Park, J. (1999, November 3 - 6, 1999). *Using the Curriculum Vita to Study the Career Paths of Scientists and Engineers: An Assessment*. Paper presented at the Annual Meeting of the American Evaluation Association, Orlando Florida.
- Lent, R. W., & Worthington, R. L. (2000). On School - to - Work Transition, Career Development Theories, and Cultural Validity. *The Career Development Quarterly*, 48(4), 376 - 384. Retrieved: June 2000, from
- Leong, F. T. L. (2002). Challenges for Career Counseling in Asia: Variations in Cultural Accommodation. *The Career Development Quarterly*, 50(3), 277 - 284. Retrieved: March 2002, from
- Lewins, A., & Silver, C. (2004). *Choosing a CAQDAS Package - A Working Paper*. Guildford: CAQDAS Networking Project. Retrieved: February 20, 2005, 2005, from <http://caqdas.soc.surrey.ac.uk/Choosing%20a%20CAQDAS%20package%20-%20Lewins&Silver.pdf>
- Lewis, E. (2001). Looking Out for Offshore Students. *ISANA Newsletter*, 5(2), 10 - 11. Retrieved: July 2001, from
- Lim, S.-K. 2005, personal communication, June 13, 2005,2005.
- Maiden, S. (2004, December 13, 2004). Another Country, but an Aussie Education. *The Australian [Schools]*. 16.
- Maiden, S. (2004, July 21, 2004). Foreigners Treated as 'Cash Cows'. *The Australian [Higher Education]*. 31.
- Makris, H. 2005, personal communication, May 31, 2005,2005.
- Maslen, G. (2004, June 16 - 24, 2004). Foreign Students Differ Markedly. *Campus Review*, 14, 3.
- Maslen, G. (2004, February 11 - 17). Overseas Enrolments Boost Numbers. *Education Review*, 14, 5.
- McCallum, A. (2004). *Best Practice Teaching Strategies for International Students*. Wellington: Export Education New Zealand. Retrieved: June 13, 2005, from <http://www.educationnz.org.nz/levy/2003-2004/reports/A1.8.pdf>
- McCarthy, J. (2001). *The Skills, Training and Qualifications of Guidance Workers*, Paris: OECD. Retrieved: November 2001, from Consultants' Paper.
- MCEETYA (1999). *The Adelaide Declaration on the National Goals for Schooling in the Twenty-First Century*. Ministerial Council for Education, Employment, Training and Youth Affairs, from <http://www.mceetya.edu.au/nationalgoals/natgoals.htm>
- MCEETYA (2002). *Stepping Forward - improving pathways for all young people*. Melbourne: Ministerial Council for Education, Employment, Training and Youth Affairs, from <http://www.mceetya.edu.au/forward/index.htm>
- MCEETYA (2003). *ACTION PLAN - To Implement the Ministerial Declaration - Stepping Forward - Improving Pathways for all Young People*. Melbourne: Ministerial Council for Education, Employment, Training and Youth Affairs, from http://www.mceetya.edu.au/stepping_forward.htm#action
- MCEETYA Career Education Taskforce (1998). *Report from the Career Education Taskforce*. Melbourne: Ministerial Council for Education, Employment, Training and Youth Affairs, from <http://cc.msnsccache.com/cache.aspx?q=2023984152410&lang=en-AU&FORM=CVRE6>
- MCEETYA Taskforce on Transition from School (2003). *Career and Transition Services Framework*. Melbourne: Ministerial Council for Education,

- Employment, Training and Youth Affairs, from <http://www.mceetya.edu.au/public/career.htm>
- McInnis, C., Hartley, R., & Anderson, M. (2000). *What Did You Do With Your Science Degree?*, Melbourne: Australian Council of Deans of Science. Retrieved: December 2000,
- McKinnon, K. R., Walker, S. H., & Davis, D. (2000). *Benchmarking - A Manual for Australian Universities*, Canberra: Department of Education, Training and Youth Affairs.
- McMahon, M. (2004). *Shaping a Career Development Culture: Quality Standards, quality practice, quality outcomes - Draft Paper*. Canberra: Department of Education Science and Training and the Career Industry Council of Australia. Retrieved: June 19, 2005, from <http://www.milesmorgan.com.au/resources/NFCP-Paper.pdf>
- McMahon, M., & Patton, W. (2000). *The Changing World of Career Assessment: The Use of Qualitative Assessment Instruments*. Paper presented at the International Careers Conference, Perth.
- McMahon, M., Patton, W., & Tatham, P. (2003). *Managing Life, Learning and Work in the 21st Century*, Perth: Miles Morgan Australia.
- McMahon, M., & Tatham, P. (2002). *Career More Than Just a Job*. Canberra: Department of Education, Training and Youth Affairs.
- McNaughtan, D. (2004). *Careers for Science Graduates*. Melbourne: Graduate Careers Council of Australia Limited.
- Meggitt, P., Tourkey, A., & Singh, P. (1995). *Stereotypes and Strategies : Confucian Culture Heritage Learners - their Learning Styles and Support Needs: Implications for University and ACE Providers*, Melbourne: Centre for Adult Education.
- Mezger, J. (1998, March 2-3,1998). *Some Experiences of Taiwan and Australian Students Living and Studying in Each Other's Country*. Paper presented at the Second Australia - Taiwan Conference on Vocational Education and Training: Proceedings.
- Miles Morgan Australia (2005). *Current Projects*. Perth: Miles Morgan Australia. Retrieved: July 5, 2005, from <http://www.milesmorgan.com.au/projects.html#ACDS>
- Ministry of Education. (2000). *Education in Korea 1999 - 2000*. Seoul: Ministry of Education - Republic of Korea.
- Ministry of Education Science Sports and Culture. (1999). *Monbusho*. Tokyo: Government of Japan.
- Monash College (2004, December 10, 2004). *Pathways*. Melbourne: Monash International. Retrieved: January 13, 2005, from <http://www.monash.edu/international/pathways/>
- Monash University. (2005). *International Undergraduate Course Guide 2005*. Melbourne: Monash International.
- Monash University. (2005). *International Postgraduate Course Guide 2005*. Melbourne: Monash International.
- Morgan, P. (2000, March 2000). *Australian VET Qualifications and Their Standing in the International Market*. Paper presented at the Australian Education International Industry Seminars.
- Morris, A. (1993). Emerging Framework A; Towards a Unified 16+ Curriculum. In W. Richardson, J. Woolhouse & D. Finegold (Eds.), *The Reform of Post - 16*

- Education and Training in England and Wales* (pp. 119 -130). Harlow: Longman.
- Morse, J. M. (1998). Designing Funded Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of Qualitative Inquiry* (pp. 56 - 85). Thousand Oaks: Sage Publications.
- Mouhtouris, A. (2005). Student Traffic Between UNIS and VET Complex. *Campus Review*, 15(19), 9. Retrieved: May 18, 2005, from
- Muller, W. (1996). Asian Studies in Australian School Curriculum: an Ongoing Challenge. *Unicorn*, 22(4), 49 - 59. Retrieved: December 1996, from
- Municipal Education Bureau - Taipei. (1998). *Brief Guide to Bureau of Education Taipei City Government*. Taipei.
- National Board of Employment Education and Training. (1995). *Students' attitudes towards careers and post - school options for education, training and employment*, Canberra: Australian Government Publishing Service. Retrieved: November 1995,
- National Centre for Vocational Education Research (2004). *Australian Vocational Education and Training Statistics - Student Outcomes 2004*. Adelaide: NCVER. Retrieved: March 5, 2005, from <http://www.ncver.edu.au/statistics/surveys/sos04/sos04.pdf>
- Navaratnam, K. K. (1992, April 1992). *Assessment and Maintenance of Standards in Vocational Education Down Under*.
- Nelson, B. (2003, October, 2003). *Engaging the World through Education*. Canberra: Minister for Education, Science and Training. Retrieved: May 10, 2005, from http://aei.dest.gov.au/AEI/AboutAEI/PoliciesAndPriorities/MinisterialStatement/Minstatement_pdf.pdf
- NICEC. (1992). *Economic Benefits of Career Guidance* [Brochure 6 pp]. Cambridge:(National Institute for Careers Education and Counselling).
- Nuevo, A. B. (2002). *White Paper on International Students*. Council of Australian Postgraduate Associations, from <http://www.capa.edu.au/briefing/FinalWhi.doc>
- OECD. (2002). *Review of Career Guidance Policies - Australia Country Note*, Paris: Organisation For Economic Co-operation and Development.
- OECD. (2002). *Why Career Information, Guidance and Counselling Matter for Public Policy*: OECD. Retrieved: January 7, 2002, from Draft Background Paper.
- OECD. (2004). *Career Guidance and Public Policy - Bridging the Gap*, Paris: Organisation For Economic Co-operation and Development.
- OECD (2004). *Education at a Glance - 2004 Tables*. Paris: OECD, from http://www.oecd.org/document/11/0,2340,en_2649_37455_33712011_1_1_1_37455,00.html
- OECD - Centre for Educational Research and Innovation. (2004). *Internationalisation and Trade in Higher Education*. Paris: OECD.
- Otmar, R. (Ed.). (2001). *Future Finder Jobmaps*. Melbourne: Hobsons Australia.
- Paewai, S., & Meyer, L. (2004, November 2004). *Academic Achievement Levels of International Students*. Wellington: Education New Zealand, from <http://www.educationnz.org.nz/levy/2003-2004/reports/a3.pdf>
- Pallant, J. (2005). *SPSS Survival Manual*. Sydney: Allen & Unwin.
- Patton, W. (2001, May 14, 2001). *Career Education: What we know, What we need to Know*. Paper presented at the Enterprise and Career Education Foundation Research Forum.

- Patton, W. (2001). *Research Forum Report 2001, Career Education - What we Know, and What we Need to Know*. Canberra: Department of Education, Science and Training. Retrieved: July 3, 2005, from <http://cc.msnsocache.com/cache.aspx?q=2023984152410&lang=en-AU&FORM=CVRE6>
- Pedersen, P. (1997). Positive Consequences of Cross - Cultural Encounters. *The Journal of International Education*, 22 - 27. Retrieved: Spring 1997, from Phillips KPA and Lifelong Learning Associates. (2005). *Evaluation of the Education Services for Overseas Students (ESOS) Act 2000*, Canberra: Department of Education Science and Training.
- Plant, P. (2001). *Quality in Careers Guidance*, Paris: OECD. Retrieved: November 2001, from Consultants' Paper.
- Png, I. 2005, personal communication, April 4, 2005,2005.
- Powell, J. (2001). *Professional Qualifications and Mobility*. Paper presented at the 15th Australian International Education Conference, Sydney.
- Power, C. (1988). *Participation as an Education Performance Indicator*. Paper presented at the Indicators in Education, Sydney.
- Prime Minister's Youth Pathways Action Plan Taskforce. (2001). *Footprints to the Future*, Canberra.
- Qureshi, M. A. (1996). Current Trends and Issues in Technical and Vocational Education in Asia and the Pacific. *UNEVOC Info*(8), 1 - 3. Retrieved: August 1996, from
- Raffe, D. (1993). Multi - Track and Unified Systems of Post - Compulsory Education and Upper Secondary Education in Scotland: An Analysis of Two Debates. *British Journal of Educational Studies*, XXXXI(3). Retrieved: September 1993, from
- Ramburuth, P. (2001, September 25 - 28, 2001). *Internationalisation of Education: Implications for Student Learning and Socio - Cultural Factors*. Paper presented at the 15th IDP Australian International Education Conference, Sydney.
- Robbins, M. (1996, January 31, 1996). Unis Score Well in Top 500 Exporters. *The Australian*, 37.
- Robinson, R. (2004). Pathways to completion: Patterns of progression through a university degree. *Higher Education*, 47(1), 1 - 20. Retrieved: January 2004, from
- Saffu, K. (2000). Contradictions in International Tertiary Strategic Alliances: The Case from Down Under. *International Studies in Educational Administration*, 28(2), 36 - 47.
- Sawyer, K. (2003). Why Study in Australia? *Directions in Education*, 12(21), 3. Retrieved: November 21, 2003, from
- Sawyer, K. (2003). Internationalisation: At What Price? *Directions in Education*, 12(15), 2. Retrieved: August 20, 2003, from
- Senate of the United States of America (2001, April 4, 2001). *Resolution of 107th Congress Number 7*. Washington: Senate of the United States of America., Retrieved: January 18, 2005, from <http://www.nafsa.org/content/publicpolicy/usintledpolicy/senconres7.htm>
- Sheridan, G. (1999). *Asian Values - Western Dreams*. Sydney: Allen and Unwin.
- Shinn, C. (2000). What's the Big Attraction ? *International Educator*, IX(4), 14 - 21. Retrieved: Fall 2000, from
- Smith, G. (2001, March 2001). *AEI Student Surveys: Findings of AEI's Surveys of*

- Students Finishing in 1999 and Commencing in 2000*. Paper presented at the AEI Industry Forum 2001, Hobart.
- Smith, G., Lambert, S., Knox, G., Morey, A., & Foster, C. (2000). *Looking Beyond the Numbers: How International Students Evaluate their Australian Experience, A Survey of International Students who Finished a Course of Study in 1999*. Unpublished manuscript, Canberra.
- Smith, L. (2004). *Valuing Recognition of Prior Learning*, Adelaide: NCVER.
- Smith, R. (2004). Looking at the Internationalisation of primary and immediate Schools: A New Zealand Perspective. *Perspectives on Educational Leadership*, 14(6).
- Smyth, C., Zappala, G., & Considine, G. (2002). *School to Adult Life Transitions Through Work and Study: A Select Review of the Literature*, Sydney.
- Steele-Alston, M., & Whitelaw, B. (1992). Career Education for Science and Science Education Students. *Australian Journal of Career Development*, 1(1), 54 - 55. Retrieved: November 1992, from
- Stephens, L. (1995). *Gender Work: An Education Kit on the Concept of Gender and Work*. Hobart: Department of Industrial Relations Vocational Education and Training, Tasmania.
- Tatham, P. (2005). *Service Definition - Career Development and Employment Service*, Hobart: University of Tasmania.
- The Good Universities Guide 2003*. (2003 Edition ed.)(2002). Melbourne: Hobsons Australia.
- The Save British Science Society. (2004). *SBS Survey on Scottish Secondary School Science*, London: The Save British Science Society.
- Tudball, L. (2004). Internationalisation of Our Schools. *Directions in Education*, 13(3), 3. Retrieved: February 27, 2004, from
- UCLA Academic Technology Services (2004). *What Statistical Analysis Should I Use? Statistical analyses using SPSS*. Los Angeles: University of California LA Academic Technology Services. Retrieved: July 15, 2004, 2004, from <http://www.ats.ucla.edu/stat/spss/whatstat/whatstat.htm>
- University of Newcastle (2004, October 7, 2004). *How Credit Transfer Works*. Newcastle: University of Newcastle. Retrieved: January 17, 2005, from http://www.newcastle.edu.au/study/credit/how_credit.htm
- University of Tasmania (2004). *Careerhub*. Hobart: University of Tasmania. Retrieved: May 15, 2005, from <http://careerhub.utas.edu.au/>
- University of Tasmania. (2004). *Science Course Guide 2004 - 2005*. Hobart: University of Tasmania.
- University of Tasmania. (2005). *Computing Course Guide 2005*. Hobart: University of Tasmania.
- University of Tasmania. (2005). *Engineering Course Guide 2005*. Hobart: University of Tasmania.
- Vanstone, A. (2005). *Student Visa Reform Success*. Canberra: Minister for Immigration and Multicultural and Indigenous Affairs. Retrieved: January 13, 2005, from http://www.minister.immi.gov.au/media_releases/media05/v05016.htm
- Vanstone, A. (2005, April 14, 2005). *2005-06 Migration (Non Humanitarian) Program*. Canberra: Minister of Immigration and Multicultural and Indigenous Affairs. Retrieved: May 30, 2005, from http://www.minister.immi.gov.au/media_releases/media05/v05052.htm

- Varghese, J. (2001). The Internationalisation of Education. *Education Views*, 10(8), 2. Retrieved: May 4, 2001, from Victoria Office of Training and Further Education - Marketing Export Branch. (1993). *International Student Survey 1993*, Melbourne.
- Vines, J. (2005, March 1, 2005). Engineering a crisis on the supply side. *The Financial Review*, 63.
- Wachob, P. (1999). *The Chinese Learner and Western Researchers, Teachers and Administrators*. Paper presented at the Australian Education Conference, Fremantle WA.
- Wadsworth, Y. (1998). *What is Participatory Action Research?* Melbourne: Action Research International Paper 2, from <http://www.scu.edu.au/schools/gcm/ar/ari/p-ywadsworth98.html>
- Wai-Ling, B., & Nguyen, D. (2003). Science Career -Related Possible Selves of Adolescent Girls: A Longitudinal Study. *Journal of Career Development*, 29(4), 251 - 263. Retrieved: Summer 2003, from
- Walck, D., & Hensby, S. (2003). Career and Degree Choice at Transition to University. *Australian Journal of Career Development*, 12(3), 64 - 71. Retrieved: Spring 2003, from
- Wang, S.-Y. P. (2000). *An Investigation of the Factors Influencing the Espoused Teaching Strategies of Taiwanese Science Teachers*. Paper presented at the The Second Conference on Science, Mathematics and Technology Education, Taipei, Taiwan.
- Warren, C. 2005, personal communication, March 24, 2005,2005.
- Watts, A. G. (1993). Promoting Careers: Guidance for Learning and Work. *National Commission on Education*(15). Retrieved: 1993, from
- Watts, A. G. (1995, December 4, 1995). *The Changing Concept of a Career and its Implications for Career Guidance*. Paper presented at the Biennial Conference of the Career Education Association of Victoria., Bendigo.
- Watts, A. G. (1995). Guidance Trends in Europe. *Newscheck*, 5(2), 3 - 4.
- Watts, A. G. (2000). Career Development and Public Policy. *The Career Development Quarterly*, 48(4), 301 - 321. Retrieved: June 2000, from
- Watts, A. G. (2001). *The Role of Information and Communication Technologies in an Integrated Career Information and Guidance System*, Paris: OECD. Retrieved: November 2001, from Consultants' Paper.
- Watts, A. G., & Sultana, R. G. (2003). Career Guidance Policies in 36 Countries: Contrasts and Common Themes. *Australian Career Counsellor*, 14(4), 8 -15. Retrieved: Summer 2003, from
- Watts, A. G., & Sultana, R. G. (2004). Career Guidance Policies in 37 Countries: Contrasts and Common Themes. *International Journal for Educational and Vocational Guidance*, 4(2 - 3), 105 - 122. Retrieved: 2004, from
- Wei-Cheng, M. (2003). Factors That Influence Persistence in Science and Engineering Career Aspirations. *The Career Development Quarterly*, 51(3), 234 - 243. Retrieved: March 2003, from
- Wexham, B. (2002). *Graduate Outlook 2002*. Sydney: New Hobsons Press.
- Wheelahan, L. (2000). *Bridging the Divide - Developing the Institutional Structures that Most Effectively Deliver Cross- Sectoral Education and Training*, Adelaide: National Centre for Vocational Education Research.
- Wheelahan, L. (2001, September 25-28, 2001). *Pathways in Education*. Paper presented at the 15th IDP Australian International Education Conference, Sydney.

- Wheelahan, L. (2001). *Research, policy and practise: how do they fit together?: a case study on pathways and articulation at Victoria University of Technology*. Paper presented at the Australian Vocational Education and Training Research Association National Conference, Alexandria NSW.
- Wheelahan, L. (2004). The Challenges of Credit Transfer. *Australian TAFE Teacher*, 38(2), 16 -17.
- Willett, J. (2001). *Careers Education - Quality Framework*, Canberra: Enterprise and Career Education Foundation.
- Wiltshire, K. (1993). The Role of Research in Policy Making. *Unicorn*, 19(4), 34 - 41. Retrieved: November, 1993, from
- Yeung, T. Y., & Yeung, A. S. (2001, December 2-6, 2001). *Does School Motivation Change Over Secondary School Years ?* Paper presented at the Australian Association for Research in Education 2001, Fremantle.
- Ziguras, C., & Walsh, L. (2000). *New Frontiers, New Technologies, New Pedagogies*, Melbourne: Monash Centre for Research in International Education. Retrieved: April 2000,

APPENDICES

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APPENDIX 1

INFORMATION SHEET FOR PARTICIPANTS

Project

International Education - Career Paths in Science and Engineering

Audience

This questionnaire should only be answered by international fee-paying students

Purpose

Completion of this questionnaire will contribute to understanding of the career pathway factors and decisions that international students make in electing to undertake a Science and /or Engineering course in Australia.

Confidentiality

All questionnaire responses will be treated with the fullest confidentiality.

Research Project Organiser

This questionnaire is being conducted by a student enrolled in a PhD program at the National Key Centre for Science and Mathematics Education, Curtin University of Technology.

Support for the Project

The project has the support of the National Liaison Committee for International Students in Australia Inc.

A number of professional bodies have also contributed to the development of the questionnaire and research methodology.

Further information

This is available from Dr Bevis Yaxley

bevis.yaxley@education.tas.gov.au

Thank you

Your input is extremely important to the success of the project. Thank you for taking the time to complete the questionnaire.

Your participation is very much appreciated.

Greg Calvert

greg.calvert@education.tas.gov.au

September 2003

**Survey of International Fee-
paying Students Undertaking
a Course of Study in Science
and/or Engineering**

G Calvert

September 2003

Please tick the appropriate box

A. BACKGROUND

This section is asking for information about who you are.

1. **Gender** Male
Female
2. **Age** Less than 16 21-23
17-18 Older than 24
19-20
3. **Nationality** China (PRC) Korea (South)
Hong Kong SAR Malaysia
Indonesia Singapore
India Taiwan (ROC)
Japan Thailand
Other _____
4. **State/Territory where you are undertaking studies**
Australian Capital Territory South Australia
New South Wales Tasmania
Northern Territory Western Australia
Queensland Victoria
5. **Current sector of study**
Secondary School/College (Visa Subclass 571) Post graduate University (Visa Subclass 574)
Vocational education and training(Visa Subcl 572) ELICOS (Visa Subclass 570)
Undergraduate University (Visa Subclass 573) Other _____
- If you arrived in Australia before July 1, 2001 you are most likely studying on a Student Visa (Visa Subclass 560). Please indicate the **sector** in which you are mainly studying.*
6. **How would you rate your current level of English*?**
Advanced (8-9) Needs improving (4-5)
Good (7) Beginner (<3)
Intermediate (5.5 - 6)

* Numbers refer to IELTS scores to be used as a guide

B. EDUCATIONAL BACKGROUND

This section is asking for information on your education before you started your current course.

7. Most recent course completed

- Grade 10, or equivalent Undergraduate degree
Grade 11/12 or equivalent Foundation Studies
Vocational Certificate /Diploma Other _____

8. With reference to your answer in Question 7, where was this course completed?

- Overseas (Which country? _____)
In Australia (Please go to Question 12)

9a. If you ticked 'overseas' in Question 8, was the course part of an Australian qualification (e.g. Twinning program)?

- Yes No (Please go to Question 12)

9b. If you answered Yes in Question 9a, what qualification did you obtain?

- Bachelor of Science Bachelor of Engineering Other _____

9c. From which institution was this obtained? _____

9d. Was this course

Full time
Part time

9e. How was this course studied?

By distance education
On campus

10. How would you rate your success in this course?

- Excellent Needs improving
Good Unsatisfactory
Satisfactory (Pass)

11. *This question is about the transition process from your offshore course to your onshore course.*

11a. What has been your greatest concern in changing from your home country to study in Australia? (Tick one box only)

- English Language Teaching Style
Study Methods Other adjustment to living in Australia
Other (Describe) _____

11b. How have you found the course work in Australia?

- Very difficult About the same
Difficult Very easy

(Please go to Question 15)

(Continuing from Question 8 or 9a)

12. Did this course involve units of study in science and/or engineering?

Yes

No (Go To Question 15)

13a. If you answered YES in Question 12, what qualification did you obtain?

Bachelor of Science Bachelor of Engineering Other _____

13b. From which institution was this obtained? _____

13c. Was this course Full time

Part time

13d. How was this course studied? By distance education

On campus

14. What was your result for this course?

Excellent Needs improving

Good Unsatisfactory

Satisfactory

C. CURRENT EDUCATIONAL STUDIES

This section is about the course you are studying now.

15. What course are you currently doing?

Post graduate degree, Certificate Grade 11/12 or equivalent

Undergraduate degree Other _____

Vocational Qualification

Eg, Diploma, Advance Diploma, Certificate)

16. When did you commence your current course?

2003 2000

2002 1999

2001 Before 1999 Year _____

17. With reference to your answer in Question 15, what is the name of the qualification you hope to achieve?

18. Does your course involve units of study in science and/or engineering? Yes

No

19. Do you know what credit-transfer is? Yes

No

(If NO, go to question 21)

20. In enrolling for your current course, who gave you information on credit transfer or explained how your previous studies could contribute to credit for future studies?

Your Agent Course Advisor

Australian Institution Marketing Representative

Teacher Other _____

21. Prior to your current course did you undertake an Introductory Academic Program (Study Skills or Orientation Course)?

Yes

No

If No, why not _____ (Go to Question 23)

22. How would you rate the usefulness of this course?

Excellent Needs improving

Good Unsatisfactory

Satisfactory

23. How would you rate the quality of the teaching with your current course?

Excellent Needs improving

Good Unsatisfactory

Satisfactory

24. In general, how would you rate your satisfaction with your current institution?

Excellent Needs improving

Good Unsatisfactory

Satisfactory

25. Which of the following aspects of the course are most important to you?

Rate 1 most important to 5 less important

Teachers/lecturers Relevance of course material

Facilities (equipment/technology) Additional assistance provided in English

Student advisor/support services

What other aspects do you value? Please describe _____

26. What do you think your final result for this course will be?

Excellent Needs improving

Good Unsatisfactory

Satisfactory

27. Is this course recognized by a Professional Body or Society in your home country?

Yes

No (Go to Question 29)

28. If you ticked YES in Question 27 how did you find out about the recognition of your current course in your home country?

(Tick one box only)

I discussed with Australian Institution

I contacted home country authorities

I researched at Australian Education Centre

Other _____

29. During your current course have you participated in:

- Societies or clubs in your institution
- Competitions relating to your course
- Conferences
- Relevant work experience
- Other leadership positions

D. FUTURE EDUCATIONAL STUDIES

This section is about what studies you might do in the future?

- 30. Will you remain in Australia for future educational studies?** Yes (Go to Question 32)
No

31. If you answered NO in Question 30, why will you return home when you finish your current studies?

- Student visa has expired
 - Unable to meet course requirements
 - For employment or business
 - Other (please describe)
- _____

32. If you answered YES in Question 30, what are your future study plans?

- Post graduate degree
- Grade 11/12 or equivalent
- Undergraduate degree
- Other _____
- Vocational Qualification

33. Will you add to your Australian Qualification by undertaking further formal qualifications ?

- Yes
- No

If YES, what qualification or course will you consider doing?

If NO, why not?

E. CAREER

This section is about the career or job you might hope to do when you finish your studies.

34. Did you have any career preparation advice or counselling in your home country before coming to Australia?

- Yes
- No

35. What is your intended career?

36. How well do you think your current course will prepare you for this career?

Very well	<input type="checkbox"/>	Reasonably well	<input type="checkbox"/>
Fairly well	<input type="checkbox"/>	Not at all	<input type="checkbox"/>

37. Did your current institution provide you with career advice? Yes
No

38. If you answer YES in Question 37, how effective was this advice?

Excellent	<input type="checkbox"/>	Needs improving	<input type="checkbox"/>
Good	<input type="checkbox"/>	Unsatisfactory	<input type="checkbox"/>
Satisfactory	<input type="checkbox"/>		

39. Any other comment on Australian Education and Training.

F. CONTACT DETAILS (OPTIONAL)

I am available to discuss my views on Australian Education and Training Yes
No

My name is _____

I can be contacted in Australia over the next 12 months by

Email: _____

Telephone: _____

Mobile: _____

Letter: _____

Fax: _____

Thank you for your response

Please kindly return this survey in the Replied Paid Envelop by November 15 ,2003

CONSENT FORM

I Mr, Mrs, Ms (name) _____

hereby consent to my child's involvement in the research project entitled:

International Education – Career Paths in Science and Engineering.

I have read and understood the information Sheet on the above project and understand that (my child/I) is being asked to complete a questionnaire.

I understand that (my child/I) may not directly benefit by taking part in this research.

I understand that while information gained in the study may be published, (my child/I) will not be identified and all individual information will remain confidential.

I understand that I can withdraw (my child) from the study at any stage up until the end of the collection of data.

I understand that there will be no payment for (my child) taking part in this study.

I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.

I consent to (my child) being involved in this project.

Sign _____ **Date** ____ / ____ / ____

Relationship to child _____

Name of child _____

APPENDIX 2

Origin	1 Gender	2 Age	3 Nationality	4 State/Territory	5 Current Study	6 Level of English	7 Recent course completed	8 Where 7	9a If Overseas - Aust qual?	9b What Qual	9c Institution	9d Full/Part Time?	9e How studied	10 Rate your success	11a Greatest concern in changing study country	11b How have you found the course work	12 Course involve study in science/engineering	13a If Yes in 12, what qual?	13b From which institution	13c Full/Part time	13d How studied	14 Result	15 Course currently	16 When commence current course	17 Name qual in 15	18 Course units in science/engineering?	19 Do you know what credit-transfer is	20 Who explained credit transfer	21 Did you undertake Intro Academic Program	21b If no, why	22 Rate Usefulness	23 Rate quality of teaching	24 Rate your satisfaction with institution	25 Most important
M	M	21-23	India	Vic	574	G	U	India	Y	O	JNTU	F	C	E								PG	2003	MTeleEng	Y	N		N	Visa delay	S	NI	S	F	
M	M	24+	Sing	Vic	573	A	V	Singapore	N							Y	O	Sing Polytechnic	F	C	S	U	2002	BEng	Y	Y	AI	N	Not needed		S	S		
M	F	24+	UK	Vic	574	A	U	UK	N							Y	S	Uni College London	F	C	E	PG	2003	PhD	N	N		N	Not necess		S	G	F	
M	F	21-23	Mal	Vic	573	NI	11/12	Malaysia	N							Y	O	Sunway Col, Ma	F	C	S	U	2001	BCompSc	N	Y	CA	N	Not necess	S	NI	S		
M	F	19-20	HK	Vic	573	A	FS	Aus								Y	O	Trinity College	F	C	G	U	2002	BSc/Arts	Y	Y		Y		S	G	E	T	
M	F	21-23	Mal	Vic	573	G	11/12	Malaysia	Y	O	Taylor's College	F	C	E	TS	D							U	2001	BSc	Y	Y	AI	Y		S	NI	S	
M	M	21-23	Maurit	Vic	573	G	11/12	Overseas	N						Adj	D	N							2003	U	Y	N		N			G	G	
M	F	21-23	HK	Vic	573	I	FS	Aus															U	2002	EnvEng	Y	N		N			G	S	T
M	F	24+	HK	Vic	574	G	U	Aus								N							PG	2002	MBusSys	N	Y		N	Not provided		NI	S	
M	M	21-23	Sing	Vic	573	I	V	Singapore	N							Y	O	Singapore Polytech	F	C	S	U	2003	BCompSc	Y	Y	AI	N		G	NI	S	T	
M	M	21-23	India	Vic	574	A	U	India	N							N							PG	2003	MBusSys	N	N		N			S	E	
M	M	19-20	Mal	Vic	573	A	FS	Aus							Nil	D	Y	O	Trinity Found Stud,	F	C	G	U	2003	BEng	Y	Y		N			U	S	T
M	F	19-20	HK	Vic	573	I	11/12	Aus								N							U	2002	BE(Mech)	Y	N		N			NI	S	
M	M	21-23	Russia	Vic	573	G	U	Russia	N						Study	D	Y	E	Rostov State Uni	F	C	G	U	2001	BCivilEng	Y	Y	AI	N			G	E	T

APPENDIX 3 DATABASE SEARCHES and CONFERENCES ATTENDED

Table 3.1 Website Access

Australian Educational Index

<http://www.acer.edu.au/library/catalogues/aei.html>

AEI - International Education Network

<http://cunningham.acer.edu.au/dbtw-wpd/textbase/ndrie/ndrie.html>

Australian Public Affairs Information Service

<http://www.informit.com.au/show.asp?id=AP AIS>

Australian Youth Studies Clearinghouse - Abstracts

http://database.acys.utas.edu.au:591/acys/FMPro?-db=ysa.journal&-lay=Web%20Publish&-format=abstracts_search.htm&-view

Current Contents Connect

<http://www.isinet.com/products/cap/ccc/>

ERIC

http://www.eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&_pageLabel=Home_page

Google Scholar Beta

<http://scholar.google.com/>

International Labour Organization-Labordoc

<http://labordoc.ilo.org/>

VOCED – International database on Vocational Education and Training Research maintained by
NCVER

<http://www.ncver.edu.au/voced.html?PHPSESSID=2b953f6842274c5ac2a0b0ad1fd0197b>

Table 3.2 Database References and Terms

Date	Database	Key words/terms
1999-2000	ERIC	Foreign Students (International Students) and Career awareness, career choice, career pathway, career pathways, career awareness, career choice International education, college curriculum, school guidance, occupational aspiration
2005 January February	Australian Education Index	
	APAIS (Australian Public Affairs Information Service)	
	Australian Education International Network-Database of Research on International Education	
	Australian Youth Studies Clearinghouse-Abstracts	
	Current Contents Connect	
	ERIC	Foreign students and careers, and science, engineering
	Google Scholar Beta	International students and career*,career pathways and international students
	International Labour Organization-Labordoc	'Transition from School to Work'
	VOCED	

Table 3.3 Conference Papers and Participation

Year	Month	Conference	Place	Attended	Paper Given
2000	Jan.	Second Conference on Science, Mathematics and Technology Education	Taipei, Taiwan	✓	✓
	April	NLC 3 rd State Conference	Hobart	✓	✓
	Sep.	Education- The Global Challenge	Hobart	✓	
2001	March	Pre-departure Briefing- Educator Tour China	Ross	✓	
	March	AEI Industry Forum	Hobart	✓	
	April	Internationalisation of the Curriculum UTAS	Hobart	✓	
	May	NLC 4 th State Conference	Hobart	✓	✓
	July	The 5 th International Confederation of Principals	Kyonju, South Korea	✓	
	Dec.	TASTA-Tasmanian State Training Authority Conference	Launceston	✓	
2002	Feb.	AEI Industry Forum	Hobart	✓	
	April	11 th AACC National Conference	Melbourne	✓	
	April	National Advisory Committee of The Real Game	Canberra	✓	
	April	Immigration Law Course-Victoria University of Technology	Melbourne	✓	
	Sept.	Australian International Education 16 th IDP National Conference	Hobart	✓	
	Oct.	Business Educators Australasia, National Conference	Hobart	✓	✓
	Dec.	ISANA Training Program and National Conference	Launceston	✓	
2003	Jan.	Third Conference on Science, Mathematics and Technology Education	East London, South Africa	✓	✓

	Nov.	NCVER-Equity in Vocational Education	Hobart	✓	
2004	March	TASTA-Tasmanian State Training Authority Conference	Launceston	✓	
	May	NLC 7 th State Conference	Hobart	✓	✓
	Nov.	MIA Victoria / Tasmanian State Conference	Hobart	✓	
2005	May	NLC 8 th State Conference	Hobart	✓	✓
	May	Australian Education International Industry Seminars	Hobart	✓	
	Oct	Australian Education International Conference	Gold Coast	✓	✓
	Nov	NCVER Breakfast Briefings-Taking Care of Business: VET and Employers' Needs	Hobart	✓	

APPENDIX 4

FOCUS QUESTIONS FOR THE INTERVIEWS

1. Did you receive careers advice at school (high school)?
2. If so, what was the level of advice, quality and did it help or benefit you?
3. What prompted you to undertake your current course?
4. What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?
5. Does your degree studies relate to your intended career?
6. Is your degree recognised in your home country?
7. Have you received careers advice at your current University?
8. What do you understand by the term credit-transfer?
9. Who told you about credit-transfer?
10. Any other comment on careers.

APPENDIX 5 PROFESSIONAL BODIES

Association	Members	Address	Phone	Fax
Assoc. of Professional Engineers, Scientists & Managers	25,000	GPO Box 1272L Melbourne 3001	03 96958800	03 96969312
Institute of Engineers *	67,000	11 National Circuit, Barton 2600	02 62706555	02 62731488
Australian Computer Society *	16,000	Level 3,160 Clarence St, Sydney 2000	02 92993666	02 92993997
The Australian Mathematical Society	1,000	GPO Box 252-37 Hobart 7001	03 62262442	02 62262867
Australian Institute of Biology	600	Gregory Hall 112 Brookes St, Fortitude Valley 4006		0732524986
Australian Institute of Physics	2,500	1/21 Vale St N.Melbourne 3051	03 93266669	03 93282670
Australian Society For Microbiology	3,200	23/20 Commercial Road, Melbourne 3004	03 98678699	0398678722
The Royal Australian Chemical Institute	9,500	1/21 Vale St N. Melbourne 3051	03 93282033	03 93282670

Others

Institute of Materials Engineering Australasia (1,400)

Institute of Chemical Engineers in Australia (3,100)

Institute of Industrial Engineers (695)

Institute of Electrical and Electronics Engineers (4,500)

* Assessing authorities for undertaking skills assessment for migration purposes.

APPENDIX 6 SPSS FREQUENCY TABLES

Frequencies (all cases)

Statistics

	N	
	Valid	Missing
origin	110	0
q1 Gender	110	0
q2 Age	110	0
q3 Nationality	110	0
q4 State/Territory	110	0
q5 Current Study	110	0
q6 Level of English	110	0
q7 Recent course completed	109	1
q8 where was course completed	110	0
q8coun Where did recent course	110	0
q9a If Overseas - Aust qual?	69	41
q9b What Qual	11	99
q9c Institution	110	0
q9d Full/Part Time?	11	99
q9e How studied	11	99
q10 Rate your success	11	99
q11a Greatest concern in changing study country	10	100
q11b How have you found the course work	10	100
q12 Course involve study in science / engineering	99	11
q13a If Yes in 12, what qual?	68	42
q13b From which institution	110	0
q13c Full/Part time	68	42
q13d How studied	68	42
q14 Result	67	43
q15 Course currently	110	0
q16 When commence current course	110	0
q17 Name qual in 15	110	0
q18 Course units in science / engineering?	110	0
q19 Do you know what credit-transfer is	110	0
q20 Who explained credit transfer	52	58
q21 Did you undertake Intro Academic Program	108	2
q21b If no, why	110	0
q22 Rate Usefulness	47	63
q23 Rate quality of teaching	109	1
q24 Rate your satisfaction with institution	109	1

Frequency Table

origin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Can	2	1.8	1.8	1.8
	Curt	29	26.4	26.4	28.2
	M	22	20.0	20.0	48.2
	SA1	3	2.7	2.7	50.9
	SA2	6	5.5	5.5	56.4
	SA3	1	.9	.9	57.3
	SA4	14	12.7	12.7	70.0
	TT	2	1.8	1.8	71.8
	UT	31	28.2	28.2	100.0
	Total	110	100.0	100.0	

q1 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	63	57.3	57.3	57.3
	female	47	42.7	42.7	100.0
	Total	110	100.0	100.0	

q2 Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-18	12	10.9	10.9	10.9
	19-20	31	28.2	28.2	39.1
	21-23	33	30.0	30.0	69.1
	24+	34	30.9	30.9	100.0
	Total	110	100.0	100.0	

q3 Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	China (PRC)	25	22.7	22.7	22.7
	Hong Kong	8	7.3	7.3	30.0
	Indonesia	11	10.0	10.0	40.0
	India	5	4.5	4.5	44.5
	Japan	2	1.8	1.8	46.4
	Malaysia	22	20.0	20.0	66.4
	Singapore	10	9.1	9.1	75.5
	Taiwan (ROC)	1	.9	.9	76.4
	Thailand	9	8.2	8.2	84.5
	Argentina	1	.9	.9	85.5
	Brunei	1	.9	.9	86.4
	Chile	2	1.8	1.8	88.2
	Czechoslovakia	1	.9	.9	89.1
	Emirates	1	.9	.9	90.0
	Mauritius	1	.9	.9	90.9
	Myanmar	1	.9	.9	91.8
	Russia	1	.9	.9	92.7
	Sri Lanka	1	.9	.9	93.6
	UK	2	1.8	1.8	95.5
	USA	1	.9	.9	96.4
	Vietnam	3	2.7	2.7	99.1
	Kenya	1	.9	.9	100.0
	Total	110	100.0	100.0	

q4 State/Territory

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACT	2	1.8	1.8	1.8
	SA	24	21.8	21.8	23.6
	Tas	33	30.0	30.0	53.6
	WA	29	26.4	26.4	80.0
	Vic	22	20.0	20.0	100.0
	Total	110	100.0	100.0	

q5 Current Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sec school / college	24	21.8	21.8	21.8
	VET	2	1.8	1.8	23.6
	Undergrad	52	47.3	47.3	70.9
	Postgrad	32	29.1	29.1	100.0
	Total	110	100.0	100.0	

q6 Level of English

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid advanced	16	14.5	14.5	14.5
good	32	29.1	29.1	43.6
intermediate	43	39.1	39.1	82.7
needs improving	19	17.3	17.3	100.0
Total	110	100.0	100.0	

q7 Recent course completed

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Grade 10	3	2.7	2.8	2.8
Grade 11 / 12	32	29.1	29.4	32.1
Vocational Cert / Dip	23	20.9	21.1	53.2
Undergrad degree	29	26.4	26.6	79.8
Foundation studies	13	11.8	11.9	91.7
Other	9	8.2	8.3	100.0
Total	109	99.1	100.0	
Missing System	1	.9		
Total	110	100.0		

q8 where was course completed

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid overseas	69	62.7	62.7	62.7
Australia	41	37.3	37.3	100.0
Total	110	100.0	100.0	

q8coun Where did recent course

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Africa (South)	1	.9	.9	.9
Argentina	1	.9	.9	1.8
Aus	41	37.3	37.3	39.1
Brunei Darussalam	1	.9	.9	40.0
Chile	2	1.8	1.8	41.8
Czech Rep	1	.9	.9	42.7
Hong Kong	2	1.8	1.8	44.5
India	4	3.6	3.6	48.2
Indonesia	3	2.7	2.7	50.9
Japan	1	.9	.9	51.8
Malaysia	15	13.6	13.6	65.5
Mauritius	1	.9	.9	66.4
Myanmar	1	.9	.9	67.3
Overseas	1	.9	.9	68.2
Philippines	1	.9	.9	69.1
PRC	11	10.0	10.0	79.1
Russia	1	.9	.9	80.0
Singapore	10	9.1	9.1	89.1
Taiwan	1	.9	.9	90.0
Thailand	6	5.5	5.5	95.5
UK	1	.9	.9	96.4
USA	1	.9	.9	97.3
Vietnam	3	2.7	2.7	100.0
Total	110	100.0	100.0	

q9a If Overseas - Aust qual?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	11	10.0	15.9	15.9
no	58	52.7	84.1	100.0
Total	69	62.7	100.0	
Missing System	41	37.3		
Total	110	100.0		

q9b What Qual

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid ASCert	1	.9	9.1	9.1
E	4	3.6	36.4	45.5
HS Cert	1	.9	9.1	54.5
O	3	2.7	27.3	81.8
S	1	.9	9.1	90.9
Yr 11	1	.9	9.1	100.0
Total	11	10.0	100.0	
Missing	99	90.0		
Total	110	100.0		

q9c Institution

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	99	90.0	90.0	90.0
High School	2	1.8	1.8	91.8
Ho Chi Minh Uni	1	.9	.9	92.7
Ho Chi Minh Uni of Tech	1	.9	.9	93.6
JNTU	1	.9	.9	94.5
Nat Taiwan Uni of Science & Tech	1	.9	.9	95.5
Prime College	1	.9	.9	96.4
South China Uni	1	.9	.9	97.3
Taylor's College Subang Jaya	1	.9	.9	98.2
Uni of Ballarat	1	.9	.9	99.1
Xu Xian No 1 HS	1	.9	.9	100.0
Total	110	100.0	100.0	

q9d Full/Part Time?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid full time	11	10.0	100.0	100.0
Missing System	99	90.0		
Total	110	100.0		

q9e How studied

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Distance ed	2	1.8	18.2	18.2
on campus	9	8.2	81.8	100.0
Total	11	10.0	100.0	
Missing System	99	90.0		
Total	110	100.0		

q10 Rate your success

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid excellent	4	3.6	36.4	36.4
good	5	4.5	45.5	81.8
satisfactory	2	1.8	18.2	100.0
Total	11	10.0	100.0	
Missing System	99	90.0		
Total	110	100.0		

q11a Greatest concern in changing study country

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English language	7	6.4	70.0	70.0
	study methods	1	.9	10.0	80.0
	teaching style	2	1.8	20.0	100.0
	Total	10	9.1	100.0	
Missing	System	100	90.9		
Total		110	100.0		

q11b How have you found the course work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	difficult	4	3.6	40.0	40.0
	about the same	6	5.5	60.0	100.0
	Total	10	9.1	100.0	
Missing	System	100	90.9		
Total		110	100.0		

q12 Course involve study in science / engineering

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	68	61.8	68.7	68.7
	no	31	28.2	31.3	100.0
	Total	99	90.0	100.0	
Missing	System	11	10.0		
Total		110	100.0		

q13a If Yes in 12, what qual?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bach of Science	16	14.5	23.5	23.5
	Bach of Engineering	19	17.3	27.9	51.5
	Bach Science / Engineering	2	1.8	2.9	54.4
	other	31	28.2	45.6	100.0
	Total	68	61.8	100.0	
Missing	System	42	38.2		
Total		110	100.0		

q13b From which institution

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	51	46.4	46.4	46.4
Canning College	1	.9	.9	47.3
Chulankorn Uni	1	.9	.9	48.2
CIC	2	1.8	1.8	50.0
Computer School Singapore	1	.9	.9	50.9
CS	1	.9	.9	51.8
Curtin Uni Technology	1	.9	.9	52.7
FIT	1	.9	.9	53.6
Foon Yew High School	1	.9	.9	54.5
GIHS	1	.9	.9	55.5
Glenunga Intern	1	.9	.9	56.4
High School	2	1.8	1.8	58.2
Hobart College	1	.9	.9	59.1
Holmesglen Ins TAFE	1	.9	.9	60.0
ITB	1	.9	.9	60.9
King Mengleut Uni	1	.9	.9	61.8
KMUTT	1	.9	.9	62.7
Mahidol University	1	.9	.9	63.6
Monash Uni	1	.9	.9	64.5
Nanyang Polytechnic	2	1.8	1.8	66.4
Nat Uni at Misiones	1	.9	.9	67.3
Pin Hwa High School	1	.9	.9	68.2
Rostov State Uni	1	.9	.9	69.1
Santa Maria College	1	.9	.9	70.0
Singapore Polytechnic	4	3.6	3.6	73.6
Sotapakorn Uni	1	.9	.9	74.5
Stamford College	2	1.8	1.8	76.4
Sunway College	2	1.8	1.8	78.2
TAFE	2	1.8	1.8	80.0
TAFE Tasmania	2	1.8	1.8	81.8
Taylor's College	1	.9	.9	82.7
Temasek Polytechnic	1	.9	.9	83.6
Thammasat Uni	1	.9	.9	84.5
Trinity College	1	.9	.9	85.5
Trinity Found Stud, Melb	1	.9	.9	86.4
UC	1	.9	.9	87.3
Uni College London	1	.9	.9	88.2
Uni Electro-Comm, Japan	1	.9	.9	89.1
Uni of Bogor	1	.9	.9	90.0
Uni of Indonesia	1	.9	.9	90.9
Uni of Magellan	1	.9	.9	91.8
Uni of Swaziland, Africa	1	.9	.9	92.7
Uni of Tas	5	4.5	4.5	97.3
Uni Phiippines	1	.9	.9	98.2
University Malaysia	1	.9	.9	99.1
Yangon Tech Uni	1	.9	.9	100.0
Total	110	100.0	100.0	

q13c Full/Part time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	full time	64	58.2	94.1	94.1
	part time	4	3.6	5.9	100.0
	Total	68	61.8	100.0	
Missing	System	42	38.2		
Total		110	100.0		

q13d How studied

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Distance ed	2	1.8	2.9	2.9
	on campus	66	60.0	97.1	100.0
	Total	68	61.8	100.0	
Missing	System	42	38.2		
Total		110	100.0		

q14 Result

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	excellent	20	18.2	29.9	29.9
	good	31	28.2	46.3	76.1
	satisfactory	12	10.9	17.9	94.0
	needs improving	3	2.7	4.5	98.5
	unsatisfactory	1	.9	1.5	100.0
	Total	67	60.9	100.0	
Missing	System	43	39.1		
Total		110	100.0		

q15 Course currently

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	post grad	28	25.5	25.5	25.5
	under grad	53	48.2	48.2	73.6
	vocational qual	2	1.8	1.8	75.5
	Grade 11/12	24	21.8	21.8	97.3
	other	3	2.7	2.7	100.0
	Total	110	100.0	100.0	

q16 When commence current course

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1999	3	2.7	2.7	2.7
	2001	12	10.9	10.9	13.6
	2002	36	32.7	32.7	46.4
	2003	59	53.6	53.6	100.0
	Total	110	100.0	100.0	

q17 Name qual in 15

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	9.1	9.1	9.1
BA (Eng)	1	.9	.9	10.0
Bachelor Degre (hon)	1	.9	.9	10.9
BBiotech	1	.9	.9	11.8
BBusSys	1	.9	.9	12.7
BCivilEng	5	4.5	4.5	17.3
BComp	3	2.7	2.7	20.0
BCompSc	2	1.8	1.8	21.8
BEng	10	9.1	9.1	30.9
BEng (Honor)	1	.9	.9	31.8
BEng(ChemEng)	1	.9	.9	32.7
BEng(Mechatronics)	1	.9	.9	33.6
BEng(Pwr)	1	.9	.9	34.5
BEng, BCom(Acc)	1	.9	.9	35.5
Biomedical Science	2	1.8	1.8	37.3
BMechEng	2	1.8	1.8	39.1
BSc	6	5.5	5.5	44.5
BSc(CompSc)	1	.9	.9	45.5
BSc(Nan)Hon	1	.9	.9	46.4
BSc/Arts	1	.9	.9	47.3
BTech(CompStds	2	1.8	1.8	49.1
Cert IV in IT (Network Management)	1	.9	.9	50.0
Certificate	1	.9	.9	50.9
Chemical Engineer	1	.9	.9	51.8
CompSc	1	.9	.9	52.7
CompSysEng	1	.9	.9	53.6
DChemEng	2	1.8	1.8	55.5
Degree	3	2.7	2.7	58.2
DInfoTech	1	.9	.9	59.1
Doctorate	1	.9	.9	60.0
EnvEng	1	.9	.9	60.9
GradDipAppSc	2	1.8	1.8	62.7
IB	2	1.8	1.8	64.5
IB Dip	1	.9	.9	65.5
MAppSc	1	.9	.9	66.4
MAppSc Env	2	1.8	1.8	68.2
Master Degree	1	.9	.9	69.1
MBusSys	3	2.7	2.7	71.8
MComp	4	3.6	3.6	75.5
MechEng	2	1.8	1.8	77.3
MEngMgnt	5	4.5	4.5	81.8
MPhys	1	.9	.9	82.7
MProcMan	1	.9	.9	83.6
MTeleEng	4	3.6	3.6	87.3
Not sure	1	.9	.9	88.2
P	2	1.8	1.8	90.0
PhD	4	3.6	3.6	93.6
SACE	5	4.5	4.5	98.2
SSABSA	1	.9	.9	99.1
Year 12	1	.9	.9	100.0
Total	110	100.0	100.0	

q18 Course units in science / engineering?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	95	86.4	86.4	86.4
	no	15	13.6	13.6	100.0
	Total	110	100.0	100.0	

q19 Do you know what credit-transfer is

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	57	51.8	51.8	51.8
	no	53	48.2	48.2	100.0
	Total	110	100.0	100.0	

q20 Who explained credit transfer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agent	10	9.1	19.2	19.2
	Aust Institution	10	9.1	19.2	38.5
	Teacher	8	7.3	15.4	53.8
	Course Advisor	18	16.4	34.6	88.5
	Marketing Rep	2	1.8	3.8	92.3
	other	4	3.6	7.7	100.0
	Total	52	47.3	100.0	
Missing	System	58	52.7		
Total		110	100.0		

q21 Did you undertake Intro Academic Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	43	39.1	39.8	39.8
	no	65	59.1	60.2	100.0
	Total	108	98.2	100.0	
Missing	System	2	1.8		
Total		110	100.0		

q21b If no, why

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	72	65.5	65.5	65.5
Course was not aquired	1	.9	.9	66.4
ELICOS clashed	1	.9	.9	67.3
I'm in High School	1	.9	.9	68.2
I have related background	1	.9	.9	69.1
I was confident on my current course	1	.9	.9	70.0
IB is Year 11/12	1	.9	.9	70.9
In the Army	1	.9	.9	71.8
No time	3	2.7	2.7	74.5
Not aware	4	3.6	3.6	78.2
Not interested	1	.9	.9	79.1
Not much help	1	.9	.9	80.0
Not necessary	15	13.6	13.6	93.6
Not offered or sought	3	2.7	2.7	96.4
Speak Eng	1	.9	.9	97.3
Stil doing SACE	1	.9	.9	98.2
Visa delay	1	.9	.9	99.1
What is it?	1	.9	.9	100.0
Total	110	100.0	100.0	

q22 Rate Usefulness

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid excellent	4	3.6	8.5	8.5
good	19	17.3	40.4	48.9
satisfactory	15	13.6	31.9	80.9
needs improving	9	8.2	19.1	100.0
Total	47	42.7	100.0	
Missing System	63	57.3		
Total	110	100.0		

q23 Rate quality of teaching

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid excellent	9	8.2	8.3	8.3
good	44	40.0	40.4	48.6
satisfactory	30	27.3	27.5	76.1
needs improving	23	20.9	21.1	97.2
unsatisfactory	3	2.7	2.8	100.0
Total	109	99.1	100.0	
Missing System	1	.9		
Total	110	100.0		

q24 Rate your satisfaction with institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	excellent	14	12.7	12.8	12.8
	good	42	38.2	38.5	51.4
	satisfactory	33	30.0	30.3	81.7
	needs improving	18	16.4	16.5	98.2
	unsatisfactory	2	1.8	1.8	100.0
	Total	109	99.1	100.0	
Missing	System	1	.9		
Total		110	100.0		

Frequencies

Statistics

	N	
	Valid	Missing
q25.1 Most important aspect	88	22
q25.2 second important aspect	63	47
q25.3 third important aspect	60	50
q25.4 fourth important aspect	57	53
q25.5 fifth important aspect	55	55
q25.6 other aspects important to you	110	0

Frequency Table

q25.1 Most important aspect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	relevance of course material	12	10.9	13.6	13.6
	assistance provided in English facilities	10	9.1	11.4	25.0
	student advisory / support	8	7.3	9.1	34.1
	teachers / lecturers	3	2.7	3.4	37.5
	Total	55	50.0	62.5	100.0
Missing		88	80.0	100.0	
Total		22	20.0		
		110	100.0		

q25.2 second important aspect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	relevance of course material	21	19.1	33.3	33.3
	assistance provided in English facilities	5	4.5	7.9	41.3
	student advisory / support	18	16.4	28.6	69.8
	teachers / lecturers	10	9.1	15.9	85.7
	Total	9	8.2	14.3	100.0
Missing		63	57.3	100.0	
Total		47	42.7		
		110	100.0		

q25.3 third important aspect

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
relevance of course material	17	15.5	28.3	28.3
assistance provided in English	5	4.5	8.3	36.7
facilities	20	18.2	33.3	70.0
student advisory / support	9	8.2	15.0	85.0
teachers / lecturers	9	8.2	15.0	100.0
Total	60	54.5	100.0	
Missing	50	45.5		
Total	110	100.0		

q25.4 fourth important aspect

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
relevance of course material	13	11.8	22.8	22.8
assistance provided in English	10	9.1	17.5	40.4
facilities	8	7.3	14.0	54.4
student advisory / support	25	22.7	43.9	98.2
teachers / lecturers	1	.9	1.8	100.0
Total	57	51.8	100.0	
Missing	53	48.2		
Total	110	100.0		

q25.5 fifth important aspect

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
relevance of course material	1	.9	1.8	1.8
assistance provided in English	33	30.0	60.0	61.8
facilities	5	4.5	9.1	70.9
student advisory / support	15	13.6	27.3	98.2
teachers / lecturers	1	.9	1.8	100.0
Total	55	50.0	100.0	
Missing	55	50.0		
Total	110	100.0		

q25.6 other aspects important to you

	Frequency	Percent	Valid Percent
Valid			
	106	96.4	96.4
Application of studies	1	.9	.9
Better prep needed	1	.9	.9
Better teaching = better learning	1	.9	.9
Studies in Business Section	1	.9	.9
Total	110	100.0	100.0

Frequencies

Statistics

	N	
	Valid	Missing
q26 Anticipated Final result	109	1
q27 Course recognised in home country	108	2
q28 If yes in 27, how did you find out	54	56

Frequency Table

q26 Anticipated Final result

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	excellent	12	10.9	11.0	11.0
	good	47	42.7	43.1	54.1
	satisfactory	35	31.8	32.1	86.2
	needs improving	14	12.7	12.8	99.1
	unsatisfactory	1	.9	.9	100.0
Total		109	99.1	100.0	
Missing	System	1	.9		
Total		110	100.0		

q27 Course recognised in home country

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	58	52.7	53.7	53.7
	no	50	45.5	46.3	100.0
	Total	108	98.2	100.0	
Missing	System	2	1.8		
Total		110	100.0		

q28 If yes in 27, how did you find out

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Australian Institution	3	2.7	5.6	5.6
	home country authorities	26	23.6	48.1	53.7
	Australian Ed centre	20	18.2	37.0	90.7
	other	5	4.5	9.3	100.0
	Total	54	49.1	100.0	
Missing	System	56	50.9		
Total		110	100.0		

		Cases	Col Response %
q29 participated	societies or clubs	31	49.2%
in during course	competitions	13	20.6%
	conferences	13	20.6%
	work experience	20	31.7%
	leadership positions	7	11.1%
Total		63	133.3%

Frequencies

Statistics

	N	
	Valid	Missing
q30 Will you remain in Aust for future studies	108	2
q31 If no, why	45	65
q32 If yes, what are study plans	63	47
q33 Further form qual	98	12
q33a If yes, what	110	0
q33b If no, why	110	0
q34 Career prep / counselling in home country	103	7
q35 Intended career	110	0
q36 How well will your course prepare you	107	3
q37 Current institution provide career advice	109	1
q38 If yes, how effective	63	47
q39 Other comment	110	0
followup available to discuss views on FET	59	51

Frequency Table

q30 Will you remain in Aust for future studies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	63	57.3	58.3	58.3
	no	45	40.9	41.7	100.0
	Total	108	98.2	100.0	
Missing	System	2	1.8		
Total		110	100.0		

q31 If no, why

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	student visa expired	16	14.5	35.6	35.6
	employment or business	24	21.8	53.3	88.9
	unable to meet course reqs	1	.9	2.2	91.1
	other	4	3.6	8.9	100.0
	Total	45	40.9	100.0	
Missing	System	65	59.1		
Total		110	100.0		

q32 If yes, what are study plans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Postgrad	38	34.5	60.3	60.3
	Undergrad	20	18.2	31.7	92.1
	Grade 11/12	1	.9	1.6	93.7
	other	4	3.6	6.3	100.0
	Total	63	57.3	100.0	
Missing	System	47	42.7		
Total		110	100.0		

q33 Further form qual

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	66	60.0	67.3	67.3
	no	32	29.1	32.7	100.0
	Total	98	89.1	100.0	
Missing	System	12	10.9		
Total		110	100.0		

q33a If yes, what

	Frequency	Percent	Valid Percent
Valid	51	46.4	46.4
APS Reg Psych	1	.9	.9
B of Medicine/Surgery/Science/Biomedical	1	.9	.9
Bachelor course	1	.9	.9
BCom	3	2.7	2.7
Business Management	1	.9	.9
CISCO networking	1	.9	.9
Commerce/Mathematics & Statistics	1	.9	.9
Computer Sciecne or Accounting	1	.9	.9
Degree or Diploma	1	.9	.9
Engineering	2	1.8	1.8
Engineering Instituted	1	.9	.9
Honor Chemistry	1	.9	.9
Hotel Management	2	1.8	1.8
Information Technology	1	.9	.9
M by research or PhD	1	.9	.9
M or PhD	1	.9	.9
Management	1	.9	.9
Masters	2	1.8	1.8
maybe Architectural	1	.9	.9
MBA	6	5.5	5.5
MChemEng	1	.9	.9
MCompSc	2	1.8	1.8
MEng	2	1.8	1.8
Not sure yet	1	.9	.9
Nursing	1	.9	.9
P	3	2.7	2.7
PhD	7	6.4	6.4
PhD & accounting	1	.9	.9
PhD Eng	1	.9	.9
PhD Science	1	.9	.9
Post Doc Research	1	.9	.9
Post Graduate	2	1.8	1.8
Psychology	1	.9	.9
Science or Commerce	1	.9	.9
Specialised course in engineering field	1	.9	.9
student visa expired	1	.9	.9
Undergraduate degree	1	.9	.9
University	1	.9	.9
Total	110	100.0	100.0

q33b If no, why

	Frequency	Percent	Valid Percent
Valid	87	79.1	79.1
Employment	1	.9	.9
Enough study	3	2.7	2.7
Finances	3	2.7	2.7
Go to US - explore	1	.9	.9
Hope to start research soon	1	.9	.9
I think A's already enough	1	.9	.9
Lazy	1	.9	.9
Maybe part time when working	1	.9	.9
Need employ & exp	2	1.8	1.8
No reason	2	1.8	1.8
no time/funding	1	.9	.9
Not sure	2	1.8	1.8
Want qual for bus sys	1	.9	.9
Want to work	1	.9	.9
Work then Korea to study	1	.9	.9
Would like to stay & study	1	.9	.9
Total	110	100.0	100.0

q34 Career prep / counselling in home country

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	28	25.5	27.2	27.2
	no	75	68.2	72.8	100.0
	Total	103	93.6	100.0	
Missing	System	7	6.4		
Total		110	100.0		

q35 Intended career

	Frequency	Percent	Valid Percent
Valid	12	10.9	10.9
Academic Researcher	1	.9	.9
Actuary	1	.9	.9
Aged care???? Nursing?	1	.9	.9
Architect, high expense so Civil first	1	.9	.9
Automotive industry	1	.9	.9
Automotive industry Management	1	.9	.9
Bank/Market/Travel/IT	1	.9	.9
Biology Engineer	1	.9	.9
Business	4	3.6	3.6
Business Technology	1	.9	.9
Car Company	1	.9	.9
Chemical Engineer	2	1.8	1.8
Chemical Scientist	1	.9	.9
Chemist	3	2.7	2.7
Chemist/Physicist with mathematic skills	1	.9	.9
Civil Engineer	2	1.8	1.8
Commerce/Marketing/International Business	1	.9	.9
Communication, Commerce	1	.9	.9
Computer communication	1	.9	.9
Computer Programmer	1	.9	.9
Computer Security or eCommerce	1	.9	.9
Computer System Engineer	1	.9	.9
Computing	2	1.8	1.8
Construction Eng/Proj Man	1	.9	.9
Construction engineering	1	.9	.9
Dietician	1	.9	.9
Doctor	1	.9	.9
Elect Eng - robotics	1	.9	.9
Engineer	9	8.2	8.2
Engineer or Business Management	1	.9	.9
Engineer/Science & Tech	1	.9	.9
Engineering Manager	1	.9	.9
Entrepreneur	1	.9	.9
Env Consultant	1	.9	.9
EnvEng	1	.9	.9
Establish own Company	1	.9	.9
Haven't decided	1	.9	.9
Hospital or Bank	1	.9	.9
IT	2	1.8	1.8
Lecturer	3	2.7	2.7
Manage a Company	1	.9	.9
Manage IT company	1	.9	.9
Manager	1	.9	.9
Manager in Computing	1	.9	.9
Many options	1	.9	.9
Marine Science & related to medicine	1	.9	.9
Marketer	1	.9	.9
Mecatronic Engineer	1	.9	.9
Mechanical Engineer	3	2.7	2.7
No idea	1	.9	.9
Not sure	1	.9	.9
Nurition	1	.9	.9
Performer, Interpreter	1	.9	.9
Power Electrical Engineer	1	.9	.9
Power Engineer in Fuel Cell	1	.9	.9
Psychologist	1	.9	.9
Psychologist or Fashion Designer	1	.9	.9
Research-orientated	1	.9	.9
Research Assistant	1	.9	.9
Research Scientist	1	.9	.9
Researcher	4	3.6	3.6
Researcher, R&D work	1	.9	.9
Sale Engineer	1	.9	.9
Scientist	1	.9	.9
Scientist; microbiologist	1	.9	.9
Software Developer	1	.9	.9
Software Engineer	1	.9	.9
Software engineer/comp sec consultant	1	.9	.9
Soldier	1	.9	.9
Successful businesswoman (travel world)	1	.9	.9
System Analysis	1	.9	.9
Teacher	1	.9	.9
Telecomm & networking	1	.9	.9
Zoology	1	.9	.9
Total	110	100.0	100.0

q36 How well will your course prepare you

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very well	18	16.4	16.8	16.8
	fairly well	41	37.3	38.3	55.1
	reasonably well	42	38.2	39.3	94.4
	not at all well	6	5.5	5.6	100.0
	Total	107	97.3	100.0	
Missing	System	3	2.7		
Total		110	100.0		

q37 Current institution provide career advice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	63	57.3	57.8	57.8
	no	46	41.8	42.2	100.0
	Total	109	99.1	100.0	
Missing	System	1	.9		
Total		110	100.0		

q38 If yes, how effective

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	excellent	4	3.6	6.3	6.3
	good	22	20.0	34.9	41.3
	satisfactory	24	21.8	38.1	79.4
	needs improving	11	10.0	17.5	96.8
	unsatisfactory	2	1.8	3.2	100.0
	Total	63	57.3	100.0	
Missing	System	47	42.7		
Total		110	100.0		

q39 Other comment

	Frequency	Percent	Valid Percent
Valid	80	72.7	72.7
Best.	1	.9	.9
Challenging	1	.9	.9
Classes too large	1	.9	.9
Course fees rising too much	1	.9	.9
Course very hard	1	.9	.9
Ed Institute is making money mainly	1	.9	.9
Fee too high for standard of faculty	1	.9	.9
Freedom!	1	.9	.9
Freedom! Good!	1	.9	.9
Good but too much theory over practice	1	.9	.9
Good, stable ed system.	1	.9	.9
Hard to adjust to Aus teach approach	1	.9	.9
I learn a lot during my study in Aus	1	.9	.9
Is very good. Enjoyed study.	1	.9	.9
Lecturers need to improve communication skills.	2	1.8	1.8
More contact hrs, slower pace teaching	1	.9	.9
Need improv in teaching. More prac	1	.9	.9
Need more support for Internat stds	2	1.8	1.8
Need to be more aware of Int Stud knowledge (or lack thereof)	1	.9	.9
Needs improvement.	3	2.7	2.7
Not prac enough	1	.9	.9
Please do not raise school fees.	1	.9	.9
Satisfactory	1	.9	.9
Too expensive	2	1.8	1.8
Want to study more subject next yr	1	.9	.9
Total	110	100.0	100.0

followup available to discuss views on FET

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	52	47.3	88.1	88.1
no	7	6.4	11.9	100.0
Total	59	53.6	100.0	
Missing System	51	46.4		
Total	110	100.0		

APPENDIX 7 INTERVIEW SAMPLE DATABASE

Appendix 7 Interview Sample Database

Questions												Background data				1	2	3	4
Cases	Inst.	Ref.	M/F	Age	National	Course	FoS	Level	English	School	Previous	Career adv	Level adv	Why course	Career				
1	Utas	69	M	19-20	Malaysia	B.Sc	S	UG	Inter	NG		Yes	Further study	Interest in subject	chemist/physicist				
2	Utas	56	M	19-20	Malaysia	B.Eng	E	UG	Inter	NG		Yes	course c & os instit	Family members did same course	power engineer				
3	Utas	77	F	24+	UK	M.Comp	C	PG	Adv	G/non G		Yes	course counselling	n/a	Software Engineer				
4	Utas	57	M	21-23	Malaysia	B.Sc	S	UG	Good	G		No	n/a	Interest in subject and employment outcome	chemist				
5	Utas	48	M	21-23	Vietnam	B.Eng(Hons)	E	UG	Good	G		No	n/a	Strength in maths/physics	Engineering & business				
6	Utas	74	F	24+	Sri Lanka	M.AppSc	S	PG	Adv	G		No	n/a	Interested in the subject area	Environmental consultant				
7	Utas	54	M	21-23	Malaysia	B.A (Eng)	E	UG	Good	G	VET	Yes	Study abroad	Good at subjects.Interested cars	Mechanical Engineer				
8	Utas	73	M	21-23	Czech Rep	M.Comp	C	PG	Adv	G		Yes	course counselling	Influenced by friends	Manager IT company				
9	Utas	72	M	21-23	Malaysia	B.Eng(Civ)	E	UG	Good	G		Yes	strengths/weakness	Family members did same course	Civil engineer				
10	Utas	65	F	19-20	Malaysia	B.Eng	E	UG	Inter	NG		Yes	Further study os	Good at maths & physics.Get job.	Civil Engineer/coffee shop owner				
11	CUT	101	M	24+	Malaysia	M.Eng M	E	PG	Good	G*	VET	No	n/a	Enhance knowledge & employability	Engineer-Automotive industry				
12	Mon	5	F	19-20	Hong Kong	B.Sc	S	UG	Adv	G	Found St	Yes	course counselling	Double degree to keep options open	psychologist/communications				
13	Mon	21	F	24+	Hong Kong	B.T(Comp)	C	UG	Needs Imp	G	VET	Yes	Info about jobs	Interested in the subject area	Systems analyst				
14	Glen	37	F	19-20	PRC	SACE		school	Good	G		Yes	course counselling	personal preference	Commerce/marketing				
15	Mon	8	F	21-23	Hong Kong	B.EnvEng	E	UG	Inter	G	Found St	Yes	course counselling	Interested in the environment	Environmental Engineer				
16	Mon	20	M	24+	Argentina	PhD	S	PG	Good	NG		Yes	Strengths/weakness	Experience studying overseas	Entrepreneur				
17	Utas	52	F	19-20	USA	B.Sc	S	UG	Adv	G		Yes	Visits from employers	Enjoyed science & science projects	Marine products/research				
18	Utas	67	M	24+	Malaysia	B.Eng(Civ)	E	UG	Adv	G		No		Friend had done course	Civil engineer				
19	Mon	7	M	21-23	Mauritius	B.Eng	E	UG	Good	G*		Yes	Info about jobs	Employment prospects good	Electrical engineer				
20	Mon	18	M	24+	Malaysia	M.B.Syst	E	PG	Good	G		Yes	Info about uni/college	Done two courses in Australia	Engineer				
21	TAFE	110	M	24+	Taiwan	DipITNet	C	Diploma	Needs Imp	NG	VET	No		Interested	Network engineer				
22	CUT	88	M	17-18	Malaysia	B.Eng	E	UG	Inter	G	Found St	Yes	Advice about uni	Brothers had done same course	Chemical engineer				

5	6	7	8	9	10	Researcher comment
Degree-c	Recognition	Uni career	Credit/T	Who C/T?	Comment	Careers Q to Interv
Yes	Yes	Vacation employment	Yes	High school	PR	
Yes	Yes	Employer visits	No	n/a	Interview program.PR	
Yes	Guess so	Yes-approaches to finding a job	Yes	n/a	Gained RP	
Yes	Think so	No	Yes	course advisor		
Yes Eng but no busin	Yes	Interview program	Yes	Twinning	PR	
Yes	Yes	No,I wish they offered some guidance	Yes	n/a	Worked 7 years between undergrad and postgrad studies	
Yes	Yes	No	Yes	Twinning	Qualification after twinning program in home country	
Yes,overqualified	Yes	Yes.Interview program & job fair	Yes	course advisor	PR.Commence a business in Tas.	
Yes	No		Yes	n/a	Comparison of Malaysian and Australian ed standards	
Yes	Yes	Used website	Yes		Scholarship	
Yes	Yes	No	Yes	course co-ordinator	Course completed but has not secured a job yet	
No,change of course	Yes	No	Yes		Comparison between HK and Australia	Changed career intention
Yes	Yes	Yes.Advice on course & careers	Yes	course advisor	Worked for a long time between school & uni	
Yes	Yes	No	No			Changed career intention
Yes	Yes	Yes.Advice on resume and applying for jobs	Yes		Teaching styles	Q8 change
No	Not sure	Yes.Course counselling	No		Would like to know more about educ & training	
Yes	Not sure	Not asked for advice	Yes	Agent	Teaching and assessment styles	Career intention clearer
Yes	Yes	Careers seminar/talks	Yes	Twinning	Difference between Malaysia and Aust courses	
Yes	Yes	Speaker from IEE	No		Similarity between Australia and Mauritius	
Yes	Yes	Yes,Prospective employers	Yes		Initial transition problems-covered in emails	Additional written comments Q8 change
Yes	Yes	Self research	Yes	Current institution	Comments on TAFE/Uni transition	
Yes	Yes	Yes.Prof instit speakers	No		Enjoyed cultural diversity of Curtin	

APPENDIX 8

ENROLMENT BASIS

The way in which student enrolment data is collected and collated varies across the Australian sectors of education and training.

The main terms used are enrolment, load, and student.

Usually these terms mean:

- Enrolment tends to be a student enrolled in the current course of study;
- Load refers to a full time equivalence (usually FTE or EFTSU);
- Student refers to a head count.

Enrolment is the more comparable term across sectors.

Schools

FTE means Full Time Equivalent

VET

FTE means Full Time Equivalent

Higher Education

EFTSU means Effective Full Time Student Units

EFTSL means Equivalent Full Time Student Load. The term changed from EFTSU to EFTSL with the introduction of Higher Education Support Act in 2005.

Fields of Study/ Field of Education

DEST changed the classification of courses from 2001. Fields of Study gave way to Fields of Education. Post 2001 Information Systems and Computing became a separate field while before it was incorporated into Science.

Field of Study 2000 and Before	Field of Education 2001 and After
Engineering, Surveying	Engineering and Related Technologies
Science	Natural and Physical Sciences
<ul style="list-style-type: none"> - General Science - Computer Science, Information Systems - Life Sciences - Mathematics - Physical Sciences 	<ul style="list-style-type: none"> - Mathematical Sciences - Physics and Astronomy - Chemical Sciences - Earth Sciences - Biological Sciences - Other Natural and Physical Sciences
	Information Technology <ul style="list-style-type: none"> - Computer Science - Information Systems

Source of Data in Australia from AVCC, AEI and IDP

AVCC Data

This is usually sourced from institutions and collated by the Higher Education Division of DEST.

<http://www.avcc.edu.au/content.asp?page=/publications/stats/index.htm>

AEI Data

This is collected through the Provider Registration and International Student Management System (PRISMS) database system which records student visas issued by DIMIA and updated when a student enters or leaves Australia. AEI data is usually a count of course enrolments. Many students can have two course enrolments in say the one year. For example, the student arrives in Australia to undertake an ELICOS course before then commencing a Foundation Studies or undergraduate course.

<http://aei.dest.gov.au/AEI/MIP/Statistics/StudentEnrolmentAndVisaStatistics/Explanatory.htm>

Where in 2004 AEI report there were 322,776 enrolments, this figure represents 269,205 students (Warren, 2005, p. Data commissioned from Australian Education International Student Database). A student can and is enrolled in more than one course a year (eg a student arriving into an ELICOS course and then transferring into an undergraduate program).

Gender and age are not included in enrolment data: however they are included in student data. In 2004 of the 269,205 students 47.19 % were females. In 2004 of the 269,205 students AEI reports their ages as: < 19 = 46,404, 20-24 = 135,446, > 24 = 87,355.

Further to this (Australian Education International, 2005) reports 3 figures as estimates for July 2005; 270,00 people studying on student visas, 315,000 (the first figure) plus 45,000 ELICOS students studying on non – student visas, 415,000 (this figure includes the first and the second plus 77,000 students studying higher education offshore, 18,000 studying VET offshore and 5,000 sponsored students).

IDP Data

This is usually sourced from a variety of sources including; the Australian Bureau of Statistics., the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA) and member institutions.

<http://www.idp.com/marketingandresearch/research/fastfacts/article405.asp>

Consistency of Data from AVCC, AEI and IDP

Mismatch of data may be due to varying bodies requiring student enrolment data at different times and not necessarily at census time.

“The AVCC data is based on actual university enrolments by international students, and the collection year for pre-2005, is from Sept to August (not January to December). I believe the AEI data is based on calendar year and not sure whether the counting is based on enrolment or simply issue of visa.” (Chan, 2005b)

“There has been some recent development to align the basis of collection between DEST and DIMIA.” (Chan, 2005a)

Further inconsistencies can occur especially in higher education because some offshore and onshore data is combined and given for Australian institutions.

Source of International Data

- OECD Education at a Glance 2004 (2002 Data)

http://www.oecd.org/document/11/0,2340,en_2649_37455_33712011_1_1_1_37455,00.html

- New Zealand

<http://nzqa.govt.nz>

- UK

<http://www.hesa.ac.uk>

- USA-Institute of International Education

<http://opendoors.iienetwork.org/?p=53867>

Australian Education International (2005). *Research Snapshot Number 1*. Canberra: Australian Education International. Retrieved: August 3, 2005, from http://aei.dest.gov.au/AEI/PublicationsAndResearch/Snapshots/01SS05_pdf.pdf

Chan, J. 2005a, personal communication, April 29, 2005,2005a.

Chan, J. 2005b, personal communication, April 6, 2005,2005b.

Warren, C. 2005, personal communication, March 24, 2005,2005.

APPENDIX 9

SAMPLE DEMOGRAPHICS and SURVEY STATISTICS

This appendix has some background data on the respective enrolments of the institutions used in this study (Tables 9.1- 9.4). For the higher education institutions this data relates to total enrolment, enrolment of international fee-paying students and to enrolments in the fields of study in Engineering, Science and IT and gives the relative scale of the Canberra, Curtin, Monash and Tasmanian programs.

Table 9.1 Higher Education Sector- Undergraduate Enrolment -1999/2000

Engineering	Rank by Student Enrolment	Institution	International Students
	1	RMIT	812
	2	University of New South Wales	806
	3	Melbourne	638
	4	<i>Monash</i>	571
	5	Queensland University of Technology	362
	6	Adelaide	294
	7	<i>Curtin</i>	242
	8	Sydney	237
	9	Swinburne	186
	10	University of Western Australia	148
	11	Queensland	144
	12	University of Southern Queensland	137
	13	Wollongong	132
	14	<i>Tasmania</i>	93
	15	Deakin	91
	16	University of Technology Sydney	79
	17	University of South Australia	72
Computer Science	1	<i>Monash</i>	1216
	2	CSU	647

	3	Victoria University	637
	4	Central Queensland University	416
	5	Queensland University of Technology	414
	6	Melbourne	322
	7	RMIT	294
	8	University of New South Wales	270
Science	1	RMIT	315
	2	Melbourne	238
	3	James Cook University	176
	4	University of Southern Queensland	171
	5	<i>Monash</i>	155
	6	University of New South Wales	135
	7	University of Western Australia	107
	8	Australian Maritime College	83
	9	Sydney	76
Mathematics	1	Macquarie	48
	2	University of New South Wales	27
	3	University of Technology Sydney	18

Source: (Ashenden & Milligan, 2001)

Table 9.2 Computing/ IT Skills Assessment Application for Permanent Residence by Institutions

Rank	University	
1	Central Queensland	1095
2	<i>Monash</i>	613
3	RMIT	534
4	University of New South Wales	427
5	Swinburne	358
6	University of Technology Sydney	314
7	University of Wollongong	303
8	University of Western Sydney	283
9	Victoria University	240
10	Queensland University of Technology	239
11	<i>Curtin University of Technology</i>	213
19	<i>Canberra</i>	77
31	<i>Tasmania</i>	16

Source: (Burrell, 2002, p. Skill Visa Assessment Data)

Table: 9. 3 Commencing Higher Education All Students at Selected Institutions by Field of Study 2003

	Total	Canberra	Curtin	Monash	Tasmania
Natural & Physical Science	24,307	277	711	1,801	468
IT	27,559	434	577	922	850
Engineering & Related Technologies	21,816	20	1,032	1,351	195
Non Award					
	361,555	4,843	13,662	19,868	5,940

Source: (Department of Education, 2005)

Table: 9.4 Overseas Students by Selected Higher Education Institutions 2003

	Onshore	Offshore	Total
Canberra	1339	918	2257
Curtin	6634	6990	13624
Monash	13723	2273	15996
Tasmania	1207	692	1899

Source:(Department of Education, 2005)

The following Tables (9.5 – 9.40) relate to the questionnaire sample.

Table 9.5 Gender by Sector

Sector	Male	Female	Total
Schools	11	13	24
VET	2	0	2
Higher Education	50	34	84
Total	63	47	110

Table 9.6 Ages by Sector

Sector	17-18 years	19-20 years	21-23 years	> 24 years	Total
Schools	11	12	1		24
VET				2	2
Higher Education	1	18	33	32	84
Total	12	30	34	34	110

Table 9.7 Selected Nationalities of Questionnaire Sample by Sector

Sector	Nationality	Number	% Sector
Schools	PRC	21	87
	Others	3	
VET	Japan	1	50
	Taiwan	1	50
Higher Education	Malaysia	22	26
	Indonesia	11	13
	Singapore	10	11
	Thailand	8	9
	Others	33	
		110	

Table 9.8 Location of Questionnaire Sample by State/Territory

State/Territory	Number	%
Australian Capital Territory	2	1.8
South Australia	24	21.8
Tasmania	33	30
Western Australia	29	26.4
Victoria	22	20
	110	

Table 9.9 Current Sector of Study

Sector	Visa Subclass	Number	%
Secondary	571	25	22.9
VET	572	3	2.8
Undergraduate	573	52	47.7
Postgraduate	574	30	26.6
		110	

Uncorrected data

Table 9.10 English Language Level by Sector

English Level	IELTS	Schools	VET	Higher Education	Total	%
Advanced	8-9			16	16	14.5
Good	7	4		28	32	29.1
Intermediate	5.5-6	11	1	31	43	39.1
Needs Improving	4-5	9	1	9	19	17.3
Beginner	< 3					
		24	2	84	110	

Table 9.11 Most Recent Course Completed by Sector

	Schools	VET	Higher Education	
Grade 10	3			3
Grade 11/12	21		12	33
Foundation Studies			13	13
VET		2	20	22

Undergraduate			32	32
Postgraduate			5	5
Not specified			2	2
	24	2	84	110

Table 9.12 Location of Previous Course by Nationality of Questionnaire Sample

Nationality	Nationality Numbers	Nationality %	Location Of Previous Course	Location %
China-PRC	25	22	11	15
Malaysia	22	20	14	20
Indonesia	11	10	3	4
Singapore	10	9	9	13
Hong Kong-PRC	8	7	2	2
India	5	4	3	4
Others	29	28	22	31
Not specified	-	-	5	7
	110			

(Rounding factor %)

Table 9.13 If the Previous Course was Studied Overseas was it Part of an Australian Qualification

	Schools	VET	Higher Education	Total
Yes	3		9	12
No	9		47	56
Not specified				1
				69

Table 9.14 Qualification Studied Offshore as part of an Australian Qualification

	Schools	VET	Higher Education	Total
B. Engineering			4	4
B. Management			1	1
B. Science			2	2
High school certificate	3		1	4
Unspecified			1	1
				12

Table 9.15 Previous Course Result

	School	VET	Higher Education	Total
Excellent	2	1	16	19
Good	2	1	26	29
Satisfactory			13	13
Needs Improving			3	3
Unsatisfactory			1	1
				65

Table 9.16 Current Course Qualification

Course	Numbers	% Sample
Postgraduate	27	24.8
Undergraduate	53	48.6
VET	3	2.7
Grade 11/12	23	21.1
Other	3	2.7
Missing	1	.9
	110	

Table 9.17 Commencement Year of Current Course

Year	School	VET	Higher Education	Total
2003	13	2	44	59
2002	7		29	36
2001	4		8	12
2000				
1999				
Before 1999			3	3
				110

Table 9.18 Studying Units of Science and/or Engineering

	Number	%
Yes	94	86.2
No	15	13.8
Not specified	1	0.9
	110	

Table 9.19 Source of Knowledge about Credit-Transfer

	School	VET	Higher Education	Total
Agent	1		11	12
Australian Institution	1		8	9
Teacher	4		5	9
Course Advisor	1		21	22
Marketing Representative	1		2	3
Other-Friend			2	2
Other-Self Research			3	3
Other-International Student Advisor			1	1
Other-Head of School			1	1
Other-Website			1	1
				63

Table 9.20 Attendance at Introductory Academic Program

	School	VET	Higher Education	Total
Yes	11	1	31	43
No	12	1	52	65
Not specified				2
				110

Table 9.21 Quality of Teaching in the Current Course

	School	VET	Higher Education	Total
Excellent	5		4	9
Good	12		32	44
Satisfactory	5		24	29
Needs Improving	2	2	21	25
Unsatisfactory			2	2
Not specified			1	1
				110

Table 9.22 Satisfaction with Institution

	School	VET	Higher Education	
Excellent	6		7	13
Good	11	1	32	44
Satisfactory	6		27	33
Needs Improving	1	1	16	18
Unsatisfactory			2	2
	24	2	84	110

Table 9.23 Most Important Aspect of the Course - Teachers/Lecturers

Rank		School	VET	Higher Education	Total
1	Most Important	14	1	39	54
2		2	1	7	10
3		1		8	9
4				1	1
5	Less Important			1	1
		17	2	56	75

Table 9.24 Most Important Aspect of the Course - Facilities

Rank		School	VET	Higher Education	Total
1	Most Important	1		10	11
2		3		13	16
3		4		16	20
4		1		6	7
5	Less Important	1	1	4	6
		10	1	49	60

Table 9.25 Most Important Aspect of the Course - Student Advisors/Support services

Rank		School	VET	Higher Education	Total
1	Most Important	1		4	5
2		1		8	9
3		1		7	8
4		3	1	20	24
5	Less Important	3		12	15
		9	1	51	61

Table 9.26 Most Important Aspect of the Course – Relevance of Course Materials

Rank		School	VET	Higher Education	Total
1	Most Important	3		12	15
2				22	22
3		3	1	11	15
4		5		7	12
5	Less Important	1			1
		12	1	52	65

Table 9.27 Most Important Aspect of the Course - Additional Assistance Provided in English

Rank		School	VET	Higher Education	Total
1	Most Important	9	1	4	14
2		3		1	4
3				4	4
4				10	10
5	Less Important	4		28	32
		16	1	47	64

Table 9.28 Most Important Aspect of the Course - Monash University Responses

Variable	Number	Percent of Responses
Teachers/lecturers	16	32
Facilities	13	26
Student advisors/support	7	14
Relevance of Course Material	11	22
Assistance with English	3	6
	50	

Table 9.29 Anticipated Results for Current Course

	School	VET	Higher Education	Total
Excellent	6	1	5	12
Good	9		38	47
Satisfactory	5	1	30	36
Needs Improving	2		11	13
Unsatisfactory	1			1
Not specified				1
	23	2	84	110

Table 9.30 Qualification Recognised by a Professional Body/Society in Home Country

	School	VET	Higher Education	Total
Yes	5	1	52	58
No	17	1	30	48
Do not know			2	2
Not specified				2
				110

Table 9.31 Source of Advice on Recognition

	School	VET	Higher Education	Total
Australian Institution	1		2	3
Home Country Authorities	4		20	24
Australian Education Centre			22	22
Friends			3	3
Education Agent			2	2
Previous Education Provider			1	1
	5	0	50	55

Table 9.32 Participation in Extra-curricula Course Activities

	School	VET	Higher Education	Total
Societies/clubs	2		29	31
Competitions	6	1	7	14
Conferences	2		10	12
Work experience	5		14	19
Leadership Roles	1		6	7
	16	1	66	83

Table 9.33 Remaining in Australia for Future Studies

	School	VET	Higher Education	Total
Yes	23	1	39	63
No		1	42	43
Not specified				3
				109

Table 9.34 Reasons for Returning Home at the Completion of Current Studies

	Higher Education	Total
Student visa expired	16	16
Employment/business	26	26
Unable to meet course requirements	1	1
Other - Too much stress	1	1
Other - Not enough points for PR	1	1
Other - Lifestyle not suitable	1	1
		46

Table 9.35 Future Study Plans

	School	VET	Higher Education	Total
Postgraduate degree	4		36	40
Undergraduate degree	18	1	1	20
Vocational qualification	1			1
Grade11/12	1			1
Other			1	1
				63

Table 9.36 Future Formal Study Plans

	School	VET	Higher Education	Total
Yes	18	1	45	64
No	1	1	29	31
Not specified				14
				109

Table 9.37 Career Preparation before Coming to Australia

	School	VET	Higher Education	Total
Yes	4		24	28
No	18	2	56	76
Not specified				5
				109

Table 9.38 Career Advice Accessed at Current Institution

	School	VET	Higher Education	Total
Yes	14	2	47	63
No	9		37	46
	23	2	84	109

Table 9.39 Effectiveness of Career Advice Access

	School	VET	Higher Education	Total
Excellent	2		2	4
Good	5	1	16	22
Satisfactory	6	1	17	24
Needs improving	2		10	12
Unsatisfactory			2	2
				64

Table 9.40 Available for Further Contact

Visa Subclass	School	VET	Higher Education	Total
571	13			13
572				
573		1	28	29
574			13	13
				55

The following tables (9.41 - 9.44) relate to the interview sample.

Table 9.41 Summary of Interview Sample Origin

Institution	M	F	Total
Curtin University	2	-	2
Glenunga International High School	-	1	1
Monash University	3	3	6
TAFE Tasmania	1	-	1
University of Tasmania	8	4	12
	14	8	22

Table 9.42 Interview Sample by Age

Age by years	Numbers	Per Cent
< 16		
17-18	1	4.5
19-20	6	27.3
21-23	7	31.8
> 24	8	36.4
	22	

Table 9.43 Interview Sample by Visa Subclass

Visa Subclass	School	VET	Higher Education	Total
571	1			1
572		1		1
573			14	14
574			6	6
	1	1	20	22

Table 9.44 Interview Sample by English Level

English Level	IELTS Scores	Number	Per Cent
Advanced	8-9	6	27.3
Good	7	9	40.9
Intermediate	5.5-6	5	22.7
Needs Improving	4-5	2	9.1
Beginner	<3		
		22	

Table 9.45 Rank Order of Institutions with International Fee-paying Enrolments in Science and Engineering 1999/2000

Sector	Institutions	Engineer <i>Rank</i>	Computer Science <i>Rank</i>	Science <i>Rank</i>	International Students – 2003 Total	International Students by sector -2003 %
Higher Ed	Canberra				2257	
	Curtin	7			13624	
	Monash	4	1	5	15996	
	Tasmania	14			1899	
					33776 of 136,252	
	<i>Melb</i>	3	6			
	<i>RMIT</i>	1	7	1		
	<i>Vict Uni</i>		3			
	<i>Adelaide</i>	6				
<i>QUT</i>	5	5				
					45	
VET	Box Hill					
	Tasmania				309	
					309 of 57,326	
	<i>W.A</i>					
					19	
Schools	S.A				561 of 26,799	
	<i>A.C.T.</i>					
						9
				303,324		

Rank based on data in Table 9.1 after Ashenden & Milligan (2001). Population figures 2003 are sourced from either Australian Education International (2004c) or the institution

Ashenden, D., & Milligan, S. (2001). *The Age-The Good Universities Guide 2002 Edition* (2002 ed.). Melbourne: Hobsons Australia.

Burrell, S. (2002). Skills Assessment Data for Permanent Residence by Source Institution [Unpublished data]. pp. Skill Visa Assessment Data). Sydney:(Australian Computer Society).

Department of Education, S. a. T. (2005, February 21 2005). *Students 2003 - Selected Higher Education Statistics*. Canberra: Department of Education, Science and Training. Retrieved: March 8 2005, from http://www.dest.gov.au/highered/statistics/students/03/student_tables/tables.htm

APPENDIX 10 INTERVIEW TRANSCRIPTS

Interviewee: Case (1)

Greg: For the tape, can you give me your name?

Interviewee: I am

Greg: Thank you, now there are 8 questions, and these questions also relate back to your questionnaire. Question one...

1 Did you receive careers advice at school (high school)?

Interviewee: Yes, I did.

Interviewee: Yes.

Greg: Have you changed your idea about this since last year? Or are they still the areas you think you might go into?

2 If so, what was the level of advice, quality and did it help or benefit you?

Greg: What grades you might have got Careers Advice?

Interviewee: Ah what I get is from email it said that we are having careers fair in TU, so I just go...went and had a look.

Greg: So...

Interviewee: I just went to TU and had a look.

Greg: Oh, okay.

Interviewee: Yeah.

Greg: But actually at school in Malaysia, before you came to Australia, did you get any careers advice?

Interviewee: Ah...for example...

Greg: Did any of your teachers talk to you about various jobs or occupations?

Interviewee: In Australia?

Greg: No, in Malaysia.

Interviewee: Oh ok – not much, all we get is about further study.

Greg: Further study, so the advice you got was about further study.

Interviewee: Yeah.

Greg: Okay then. Thank you.

3 What prompted you to undertake your current course?

N/A

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: In here in your survey you indicated that you thought you might become a Chemist or Physicist.

Interviewee: Yeah.

Greg: In...have you changed your idea about this since last year? Or are they still the areas you think you might go into?

Interviewee: Ah...Chemistry is still my major...post major...Physics...ah...I try Physics and Mathematics...because I think...because my two best results is Maths and Chemistry.

Greg: Ok, so you still think your career might relate to those two areas?

Interviewee: Yeah.

Greg: Ok then, thank you. The next question is...

5 Does your degree studies relate to your intended career?

Greg: Does your degree relate to your intended career, well in your case obviously it does, because you're doing Bachelor of Science.

Interviewee: Yes.

Greg: And are you in second year now?

Interviewee: Yes.

Greg: And so your sub majors are still Chemistry and Physics with Maths.

Interviewee: No, ...um...all I take is Chemistry and Maths.

Greg: Chemistry and Maths?

Interviewee: Yes just these two.

Greg: Okay then.

6 Is your degree recognised in your home country?

Interviewee: Mm...yeah.

Greg: Yeah. Okay then.

7 Have you received careers advice at your current University?

Interviewee: Mm...you mean went...went there and asked for...asked about some careers advice?

Greg: Yes.

Interviewee: No, I didn't

Greg: No. Have you accessed UTAS's internet site and looked about for careers advice on that?

Interviewee: Mm... I did surf on the UTAS site about the employment and just like that.

Greg: Was that vocation employment?

Interviewee: Yes.

Greg: Right. Ok. So you have used it for vocation employment?

Interviewee: Yeah.

Greg: Okay then.

8 What do you understand by the term credit-transfer?

Interviewee: Um...if suppose I study in one of the colleges at Malaysia and then UTAS recognised the college and what I studied before can be totally transferred to here.

Greg: Okay then. Good. Thank you.

9 Who told you about credit-transfer?

Greg: And can you remember who told you about credit-transfer, I think in your survey you might have indicated, I think – teacher - can you remember when you were in, did you find out about credit-transfer in Malaysia or when you got to Australia.

Interviewee: Um...I think, from high school.

Greg: From high school.

Interviewee: Yeah.

Greg: So you have known about it for quite a while.

Interviewee: Yes.

Greg: Okay then. With careers in the future you'll finish your degree at the end of next year.

Interviewee: Yes, my Bachelor.

Greg: Are you planning further studies?

Interviewee: I think.

Greg: You think you will?

Interviewee: I plan to do that.

Greg: What Masters?

Interviewee: Um...I will first finish my honours here.

Greg: Honours.

Interviewee: If I get...if my results allow me to get a PHD Scholarship then I
will continue.

Greg: Here in Australia?

Interviewee: Yeah.

Greg: Okay then. And you've also indicated that you are interested in PR.

Interviewee: Kind of.

Greg: Are you also still interested in permanent residence?

Interviewee: Yes.

Greg: Okay. So eventually you would like to stay in Australia?

Interviewee: Um...probably work for at least a couple years.

Greg: Yeah.

Interviewee: Um...because the salary in Malaysia is pretty low, so unless I get...have more experience so when I go back at least I have more experience and hopefully the salary will be higher than others.

Greg: All right.

10 Any other comment on careers.

Greg: Any other comments you want to say about careers or your job, or what you think you might do in the future by way of a job or career?

Interviewee: For example?

Greg: Ah...are you fairly definite on getting into something to do with Chemistry and Maths or are you still just open-minded about what you might do.

Interviewee: oh... umm...I'm not sureso I can use my, what I know in Chemistry to do something beneficial to everyone.

Interviewee: Case (2)

Greg: Case 2, for the tape, can you say your full name.

Interviewee: Ah....

Greg: Right. Okay then. Thank you. My first question is...

1 Did you receive careers advice at school (high school)?

Interviewee: In Malaysia?

Greg: Yeah.

Interviewee: In my high school?

Greg: Yeah.

Interviewee: Yeah, because I'm coming from...um...high school so you wouldn't like having any career advice.

Greg: No careers advice?

Interviewee: ...like anything you wish...need to study.

Greg: So it was course counselling.

Interviewee: Yeah.

Greg: Mainly giving advice about which university.

Interviewee: Yes.

Greg: Can I just ask, in Malaysia are you from East or West Malaysia? Are you from KL or from...?

Interviewee: Malacca.

Greg: Oh, from Malacca, yeah, that's fine I know where Malacca is. Okay.

2 If so, what was the level of advice, quality and did it help or benefit you?

Interviewee: Utas.

Greg: So it was specifically about UTAS at high school in Malacca?

Interviewee: Um...it didn't concentrate on UTAS, ??? on UTAS?

Greg: No, just in general.

Interviewee: In general

Greg: Yeah.

Interviewee: Um...

Greg: So you got advice about a number of universities?

Interviewee: Um...like...UTS

Greg: Yeah.

Interviewee: And from U...UTAS, UWT

Greg: Yeah, so lots of Australian universities.

Interviewee: Yes.

Greg: Okay then. All right.

3 What prompted you to undertake your current course?

N/A

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Interviewee: Power engineering. Yeah, oh yeah.

Greg: Is that still your career intention?

Interviewee: Yeah.

Greg: Nothings changed in the last year, this was done this was done nearly a year ago?

Interviewee: Yeah, okay...umm...haven't changed because...um...this course is quite interesting...

Greg: Right.

Interviewee: ...and we are lacking of power, power engineering students...

Greg: Right.

Interviewee: ...for the whole Australia, so I am still interested.

Greg: Ok, perhaps when did you think you might want to go into Engineering, was that a decision you made in school, or was that a decision you made after you worked out which university you wanted to go to?

Interviewee: Um...before when I am in high school.

Greg: When you were in high school.

Interviewee: Because family members ...like...having my cousins are engineers and my brothers study...

Greg: Oh, okay, so your brothers studied engineering and your cousins studied engineering.

Interviewee: Yeah.

Greg: Okay then.

5 Does your degree studies relate to your intended career?

Interviewee: Yeah.

Greg: Yeah. You are still doing Bachelor of Engineering?

Interviewee: Bachelor of Engineering and in third year now.

Greg: Third year.

Interviewee: Third year.

Greg: Oh, okay.

Interviewee: One more year and this course takes four years.

Greg: Four years. Okay. So you will finish at the end of 2005.

Interviewee: Yeah.

Greg: Okay then.

6 Is your degree recognised in your home country?

Interviewee: Yeah.

Greg: By...ah...institute or?

Interviewee: Um...by Institute of Engineering...ah...because I am...ah...my...I am kind of professional engineers in Malaysia and says this degree is recognised.

Greg: Right. Okay then.

7 Have you received careers advice at your current University?

Interviewee: Um...the school has arranged companies to come and give us advice...like...last Friday we go to a dinner...like...having...we having Hydro and Transend, and the...come to give advice.

Greg: Oh, okay then. So that was organised by the school?

Interviewee: By the School of Engineering.

Greg: So have you had any dealing with the office yourself?

Interviewee: Ah...

Greg: Have you gone up to them and asked about part time jobs or...anything like that?

Interviewee: Um...because the school arranging it for us and we are going to have a meeting this coming week.

Greg: Oh, okay.

Interviewee: Having like interviews and I haven't really started...

Greg: Oh, okay then. All right.

8 What do you understand by the term credit-transfer?

Interviewee: Credit-transfer?

Greg: You indicated you didn't know what credit-transfer was, and the answer was 'No'.

Interviewee: Yeah.

Greg: Credit-transfer is when if you did study in Malaysia that some of that work will be recognised here, and you would get an advance standing from University of Tasmania.

Interviewee: Mmm...

Greg: Yeah. So that's what it means.

Interviewee: Oh...

Greg: Okay. Um...

Interviewee: Because...like my high school...I studied a different degree in Malaysia, It's actually called Chinese Independent School. If you pass

your exam, it is recognised by some of the uni here...like...you can come here directly.

Greg: Oh, okay then. So is that the qualification institute that you got here?

Interviewee: Yeah. UEC...Unified Examination Certificate.

Greg: UEC. Yeah. You said grade 11 and 12 equivalent.

Interviewee: I am not sure how to..., because it is a different course...

Greg: Yeah.

Interviewee: It's like a private school in Malaysia.

Greg: Yeah, okay. In here you said you would be interested in doing a PhD in Engineering?

Interviewee: Yeah.

Greg: Are you still interested in doing that at this time?

Interviewee: Um...PhD, after I finish my degree ...

Greg: Degree.

Interviewee: and get honours.

Greg: Okay.

Interviewee: And get a PhD.

Greg: Would that still be in here in Australia?

Interviewee: Yes, I hope I can do it here.

Greg: Okay. So you are talking about a long time then.

Interviewee: Mm....

Greg: Because it is almost one year after you have done your degree?

Interviewee: Um...about two years...oh...honours is in the fourth year.

Greg: Oh, that's in the fourth year.

Interviewee: Yeah.

Greg: And then you get...and then you get 3 years PhD.

Interviewee:...of PhD.

Greg: Yeah. Okay then. After that, are you interested in getting the permanent residence to Australia?

Interviewee: Yeah.

Greg: Right. So...so...one...one of the reasons why you are interested in the conversation with Hydro and other engineering companies is that eventually you might apply for PR and work in Australia.

Interviewee: Hopefully I can study PhD first and then working.

Greg: Yeah, sure.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Interviewee: Mm...I don't think I have enough careers advice...

Greg: Yeah.

Interviewee:...also my friends really don't know what to do.

Greg: Yeah, so it is lack of accurate advice and perhaps questions about...questions for you to get you to think about what you might do in the future.

Interviewee: Yeah.

Greg: Okay then. Thanks very much.

Interviewee: Case (3)

Greg: Okay. So Case 3, I only got eight questions. The first one...

1 Did you receive careers advice at school (high school)?

Interviewee: Yes.

Greg: Ah...do you know what year level that would have been?

Interviewee: Um...

Greg: Case 3, I can't hear you, you have to speak up.

Interviewee: Sorry. Um... last year at school.

Greg: So last year at school.

Interviewee: Third last year, sorry.

Greg: Third last year at school. So would that have been equivalent to grade 10?

Interviewee: Um...yeah.

Greg: Okay.

2 If so, what was the level of advice, quality and did it help or benefit you?

Interviewee: Yeah, it was both.

Greg: Both. Okay then.

Interviewee: *I thought the advice from school was ok if a little unspecific. There seem to be some stock standard things they did and advised. Looking back this had little relationship to the choice I was presented with and the path I took.*

Comments in italics were added in after the interview at the time of the transcript being verified by Case 3.

3 What prompted you to undertake your current course?

N/A

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Ah...because I just rang you a moment ago, I haven't got out your survey to actually have a look, but can you tell me...can you remind me of what you said you intended career was?

Interviewee: Um...probably software programming or software engineer

Greg: Software program...software engineer something like that. And is that actually what you are actually doing 12 months later?

Interviewee: Um...programming...

Greg: An IT project officer. And your degree, was that a Bachelor of Information Systems?

Interviewee: Graduate Diploma of Computing...

Greg: A Graduate Diploma of Computing and that lead you into this career.

Interviewee: Yeah...

Greg: And was that a Master of Information Systems, or Computing?

Interviewee: Computing.

Greg: Computing. Okay. So your voice keeps fading, can you hear me alright?

Interviewee: Yeah, absolutely, I find it a little bit strange.

Greg: Oh, okay then.

5 Does your degree studies relate to your intended career?

Interviewee: *The computing degree is clearly directly relevant.*

6 Is your degree recognised in your home country?

Interviewee: I guess so...

Difficult to speculate on this. Probably as it is recognised by the Australian computer society and they are probably consulted by their British equivalent but having never approached anyone for work or accreditation there it would be tricky to say whether there would be any problems with an overseas qualification. As Australian and Britain have a close relationship I would err on the side that the degree would be accepted.

Greg: Okay then.

7 Have you received careers advice at your current University?

Interviewee: *Yes a little bit. I went to visit someone after the graduate diploma.*

Greg: Right. Was that...

Interviewee: ???

Greg: Was that about you're ultimately career intention, or was that something to do with vacation, holiday jobs something like that?

Interviewee: Um...???

Greg: Okay. So...I just repeat that for the tape because I am not sure I caught it all. So it was between your...um...Graduate Diploma, your Masters, and at that stage you were still um and aah about what you were going to do, so you went to have a conversation about careers as well.

Interviewee: Yeah. *The above paragraph pretty much applies, though the advice was not so much careers advice as how to best approach finding a job in my chosen career advice (and that is what I went there for).*

Greg: Okay then.

Greg: Um...this is part not necessarily apply to you, but a term that comes up in the Australian education and training system is credit-transfer, and a number of students do courses offshore and then get advance standing for that when they come to Australia. Did that apply to you?

Interviewee: No.

Greg: No. Okay then.

8 What do you understand by the term credit-transfer?

Greg: You understand what that means?

Interviewee: Yeah.

Greg: You understand the process?

Interviewee: Yes

Greg: Yeah. Okay then. And can you...can I just ask whether you got permanent residence here in Australia?

Interviewee: No, I am waiting for it.

Greg: Oh, you are waiting for it. Oh, okay. So...so your intention is to stay in Australia?

Interviewee: Yes. *I now have permanent residency.*

Greg: Okay. And did...was there connection between...um...your career intention and going through education and training system that you might actually think of going for PR?

Interviewee: Um...

Greg: Or did that come much later? Or was it coincidental that you come and study in Tasmania?

Interviewee: Um...

Greg: So your short answer is 'No'.

Interviewee: Yeah.

Greg: Okay. And that was just something happened so coincidental thing?

Interviewee: Yeah. *Residency was in my mind when I chose to study in Australia (as my parents were moving here) but I had not definitely decided I would apply for it as I didn't know if I would like living here and settle in etc etc. It was not a factor in the subject I chose to study before I*

decided to come here and study I was considering further study at home in this field or perhaps a grad. Recruitment position in computing that taught you on the job. So the short answer is no, but the longer answer is a little bit!

Greg: Okay then. Now what I will do is when I have this tape transcribed in two or three weeks time, I will just send you by email your comments, just so to you can see whether I reported what you said accurately or not. Is that all right?

Interviewee: Yeah, that's fine.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

N/A

Interviewee: Case (4)

Greg: Case 4, would you mind saying your full name for the tape, please?

Interviewee: Yeah

Greg: Thank you. Um...can I ask you...

1 Did you receive careers advice at school (high school)?

Interviewee: Ah...in high school?

Greg: Yeah, high school.

Interviewee: Ah...no.

Greg: No? You didn't

Interviewee: No.

Greg: Okay then.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

N/A

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Um...last year you would have said in your questionnaire about what your career intention was, and you got here "Chemist".

Interviewee: Yeah.

Greg: Is that still chemist or have you changed?

Interviewee: Yeah, yeah.

Greg: Still chemist?

Interviewee: Yeah.

Greg: Okay then.

5 Does your degree studies relate to your intended career?

Greg: And your degree, is it a Bachelor of Science?

Interviewee: Yeah.

Greg: And your major is Chemistry?

Interviewee: Yeah.

Greg: So it does relate...your studies relates to your intended career.

Interviewee: Yeah.

Greg: Okay. Are you from Malaysia?

Interviewee: Yeah.

6 Is your degree recognised in your home country?

Interviewee: Ah...yes, I think so.

Greg: You think so?

Interviewee: Yeah.

Greg: Have you checked that out or not?

Interviewee: No.

Greg: No.

Interviewee: Australian degrees are recognised in Malaysia.

Greg: Yeah, so usually Australian degrees are recognised in Malaysia.

Interviewee: Yeah.

7 Have you received careers advice at your current University?

Interviewee: No.

Greg: No? Not even for part time job?

Interviewee: Ah... for part time job...part time jobs related to Chemistry?

Greg: Yeah.

Interviewee: No.

Greg: No, nothing like that?

Interviewee: No.

Greg: Okay then.

8 What do you understand by the term credit-transfer?

Interviewee: Yes.

Greg: Yes. So what do you understand by that term?

Interviewee: It is...ah...we study at the college, and we can transfer the credit to the university.

Greg: Yeah. Okay then. Good. Thanks very much.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Um...at the moment you are in your second year, and next year you will be in your final year, at the end of that...when you possibly go home to Malaysia, what sort of chemist you will be?

Interviewee: Industrial.

Greg: Industrial chemist. Okay then. Do you think there is anything that could help you in terms of careers advice to help you get into that profession or not?

Interviewee: Ah...

Greg: Does the department or faculty organise any sort of interview program with prospective employers?

Interviewee: Yeah, they did last year but I didn't attend.

Greg: You didn't attend.

Interviewee: I think they will have this year and next year as well.

Greg: Do you think even though that's employers from Australia, do you think that might help you get an idea of...a possible role when you go home to Malaysia?

Interviewee: Um...yes.

Greg: Yeah. Okay. Thanks very much.

Interviewee: Case (5)

Greg: Case 5, for the tape, can you say your full name for me, please.

Interviewee: My name is

Greg: Case 5, thank you very much for your survey of last year. It has been nearly a year ago since I did my survey...

1 Did you receive careers advice at school (high school)?

Interviewee: Um... we had to find by ourselves.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Um...when I was in high school, because I studied in ...ah my strength is in Mathematics and Physics, some subjects related to Engineering so I decided go to study Engineering.

Greg: Is it because you are good at those subjects at school so you decided to go study Engineering?

Interviewee: Those subjects have background for Engineering, so I decided to study Engineering.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: At the moment, you are in your fourth year of your degree. The last year of your Bachelor of Engineering?

Interviewee: Yeah.

Greg: And last year here you said you are going to be ah... career intention is doing Business in Technology. Is that still so or?

Interviewee: Yeah.

Greg: And that is not quite Engineering.

Interviewee: Um ... yeah.

Greg: Why is that?

Interviewee: Even I study Engineering, I want to find a job in Engineering or related to Engineering for the first few years, after that I will move into business field and do some ... in business related to Engineer on technology or something. Because I don't... um I feel that I am not quite strong in doing the research or developing some projects with modern technology. I prefer doing with some business...

Greg: So your Engineering course gives you professional background then hopefully from that you would like to go on to develop your own business.

Interviewee: Yeah.

5 Does your degree studies relate to your intended career?

Greg: It does, doesn't it. Because you want to have the Engineering background, but then on the other hand, if you get into the developing business. Does your Engineering course provide you with that information about how to run a business?

Interviewee: Um... I think it is not really. Engineering course mostly concentrates on how to build a machine or develop a device something like that, not about business knowledge on management or something. Even we have 30 hours on project management. It is most related to Engineering Management but not Economic or about business. So I study Engineering and I will apply for a job in Engineering and will have to learn some skills ourselves to build my future career.

Greg: Yeah. Do you think you might have to do another course later to help you run a business?

Interviewee: Yeah. I think so. Maybe.

6 Is your degree recognised in your home country?

Interviewee: Yeah, sure.

Greg: Did you start the Bachelor of Engineering in Vietnam?

Interviewee: Yeah. I started the first two years in Vietnam and the last two years here.

Greg: Okay then. So you got an advanced standing?

Interviewee: Yeah.

Greg: So you did two years at Ho Chi Minh University of Technology and then you came here for the third year?

Interviewee: Yeah, that's right.

Greg: And with that. Was there any problem when you came from Vietnam to the degree here after having done two years in Vietnam?

Interviewee: Um... the problem is the lecturing and language, not academic.

Greg: No. It is just adjusting to the language.

Interviewee: Yeah.

Greg: Was your first two years in Vietnam done in English?

Interviewee: Yeah, in English.

Greg: But taught by Vietnamese lecturer?

Interviewee: Yeah.

Greg: Did you have anyone come University of Tasmania?

Interviewee: Just for a short time. A workshop or something for a couple of times a year.

Greg: So the main issue was trying to make that transition especially with language coming here.

Greg: Any other comment you would to make about that change from Vietnam to Tasmania.

Interviewee: The problem is the language is the common problem for every international student especially for Vietnamese students. I think it depends on each person. Some are good some are bad. Um... I think some study English hard in order to get good background before they came over here. When they begin to study in Engineering there will be big problems.

Greg: Yeah. The other thing I thought might be an issue for you, Case 5. If you start here in your first year, you get an expectation of what lecturers and tutors want in terms of assignment work. Was that an issue when you changed from Vietnam at the end of your second year to come here to Tasmania in your third year? Was the expectation of the lecturer you had in Vietnam different from here?

Interviewee: Yeah, I think so.

Greg: They were different. So in your third year it must be hard for you that first semester when you did assignment, because you might not have been quite sure about what the lecturer wanted.

Interviewee: Even though in my fourth year, I am sometimes not quite sure what my lecture and tutor want me to do in my assignment. For example, last week I handed in the assignment, the result come out really bad. The problem is I am not really understand the assignment question is,

because it is not clearly stated on the sheet. Most of the people received very low mark

Greg: How many other students would have come from Vietnam when you did in that program or is that just you?

Interviewee: Yeah, I think it is a twinning program

Greg: Were there lots other students?

Interviewee: Yeah, I think every year there are about 15 to 20.

Greg: So last year you would have been one of 15 to 20 who came from Vietnam.

Interviewee: Yeah.

Greg: So did you know those students experiencing the comments about the English and the expectations?

Interviewee: Yeah.

Greg: Okay.

Interviewee: I have the same problem.

Greg: You have the same problem. Okay then.

7 Have you received careers advice at your current University?

Greg: I noticed, on the notice board out here, that someone from Transend was here on Monday to talk about career at Transend? In fact the

advertisement said “Find out about a real job or something.” Did you go along to that session or not?

Interviewee: No.

Greg: No.

Interviewee: Um... when I was here last year, because before we left, we had a certificate certified that we had twinning work experience. Last year when I tried to apply, many many companies here, but they all already filled. I tried to apply in the mainland also but no one accept my application, so I had to go back to Vietnam. Um... a little bit disappointed because um... it required work experience but when I applied for a job no one from the Uni even they have a course about how to write a resume and they send my resume to some companies in Tasmania. But after I think a few weeks, only one or two of us had the interview. And the rest had a letter say that you have to find your own company and you have to do by yourself. I don't think it is really good at all.

Greg: Yeah. All right.

8 What do you understand by the term credit-transfer?

Greg: Can you tell me the benefit of the term is?

Interviewee: I think, first of all, when I studied first two year here and transferred to here. All the credits were accepted by the Utas, because is the training programs between the Utas and my University in Vietnam. All the program was taught in Vietnam is from Utas, so there is no problem with the credit at all. But the problem is the when you fail the subject in Vietnam you have to study again in here. For example, so if you want to study in Vietnam, it is okay, but if you want to study here that is no problem at all. For the credit I think not any difficulty.

Greg: Okay then. After this year, are you going back to Vietnam or you thinking of doing further study here?

Interviewee: I think I will stay here for a few years, find a job, and work around and then go back.

Greg: So are you going to study or you going to apply for permanent residence?

Interviewee: I will apply for permanent residence and find a job here, if I continue...

Greg: Oh okay, for experience. So you are not on scholarship that requires you to go back?

Interviewee: No.

Greg: Okay.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Interviewee: I think at Utas they have career service but I don't go there because it is not many jobs here in Tasmania. It is very demanding and competitive to international students with the local students here to find a job. So I have a lot of problems. After I graduate I will go to the mainland and I think there are more people, find a job there than find a job in Tasmania here. And the information in career service at Utas, I think, is quite useful.

Greg: Have you been up there?

Interviewee: Yeah.

Greg: But for vacation, employment or just find out about Engineering in general?

Interviewee: For vacation employment. Because my friend go there... he just graduated last month and he go to Queensland and got a job now. Most information he got he said it is quite useful. He said he is going to get some book and buy information about that.

Greg: You have already done that? Was that helpful or not?

Interviewee: Yeah, I think it was helpful.

Greg: Okay then. All right. Thanks very much.

Interviewee: That's all right.

Interviewee: Case (6)

Greg: Case 6, can I get you to say your full name for the tape recorder.

Interviewee:

Greg: Thank you Case 6. Can you tell me which country you were from?

Interviewee: From Sri Lanka.

Greg: What year are you in at the moment in your course?

Interviewee: It is my second year. My course is actually three semesters so I am going to finish in one and a half year. I am doing Environmental Management.

Greg: Is it Bachelor of Science?

Interviewee: It's a Master of Environmental Management.

Greg: Right. Master of Environmental Management. Okay. Is it an extra course or a degree?

Interviewee: It is an extra course and I have to do a thesis...

Greg: Minor thesis or?

Interviewee: Yeah, a minor thesis.

1 Did you receive careers advice at school (high school)?

Interviewee: When I did my high school in Sri Lanka, I didn't get much help.

Greg: Was there any advice given about going on to do further study?

Interviewee: Not at high school level. No.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Greg: No. So what made you decide to do the degree that you did and subsequently the degree you are doing now? Can you remember?

Interviewee: Um... It wasn't based on any advice I got in high school. I just happened to have interest in that area, so I chose development communications for my Bachelor degree, which I did in Philippines. Then I worked for a while. Then I got interested in environmental studies and so that's why I started to do a Masters in Environmental Studies.

Greg: Right. So do you think there was an interest in the subject area or was there information given to you by friends that might help you made that decision?

Interviewee: I was basically interested in the subject area. I hardly got any advice from school or friends at the time.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Twelve months ago you talked about being interested in going into an environmental consultancy or employment with a government institution. Has your view changed? Because it has been twelve months since you did that for me.

Interviewee: Pretty much the same.

Greg: In Sri Lanka or somewhere else?

Interviewee: Um... I would like to get some work here in Australia possible, if not, I will definitely go back to Sri Lanka.

Greg: Okay.

5 Does your degree studies relate to your intended career?

Interviewee: Yes, it does.

Greg: Explain to me, the current degree, does that give you some sort of practical internship or experience of finding out about that sort of role?

Interviewee: No, unfortunately it doesn't but I wish it did. I wish it gave some sort of support through the internship but the course I am doing doesn't give that.

Greg: Okay. Thank.

6 Is your degree recognised in your home country?

Interviewee: Yes, it is.

Greg: Okay. Did you check that out before you started or?

Interviewee: Well, in Sri Lanka mostly any institution will recognise a degree from an Australian Institution.

Greg: Okay.

7 Have you received careers advice at your current University?

Interviewee: Not much at all. I wish they offer some kind of guidance. You know, at least ? But I haven't come across that here.

Greg: I just walked from the Engineering Faculty, and students interviewed over there, I noticed that on the notice board they had a speaker from the industry on Monday this week, talking about what it was like to be an engineer.

Interviewee: Oh I see.

Greg: So in your course there hasn't been an opportunity to meet with someone who's an environmental consultant and find out about what they do.

Interviewee: Ah... there was a course... I took environmental planning and they had people from industry coming in talking about what they did. So other than that, I haven't sort of attended any seminar or anything else.

Greg: Right.

Interviewee: Getting to know how it is like working in the industry.

Greg: That course that you just mentioned, was that here at Utas?

Interviewee: Yes. Environmental planning.

Greg: So that's the component of this master.

Interviewee: Yes.

Greg: Okay then. Thank you.

Greg: Have you had any dealings with anyone here in university about vacation, jobs or part time jobs?

Interviewee: No, I haven't. It is very difficult I have been actually trying to get a part time job but it's very difficult...

Greg: Right. Okay.

8 What do you understand by the term credit-transfer?

Interviewee: Yes.

Greg: Can you tell me what it is?

Interviewee: Ah...if you plan to study in another institution you get your credit transferred.

Greg: That's right. Thanks very much.

Greg: Ah... going back to careers and the fact that you went from Sri Lanka to the Philippines to do a degree, and then you got into work, then you come from work back here. That's not the normal sort of career pathway that a student follows. Ah... is that all being the conscious decision on your part? To sort of have courses study and followed by work, by courses study. Have you had a change in career objectives over the time?

Interviewee: Yeah, I think it is more to do with circumstance, little to do with having conscious decision being taken.

Greg: I was just asking about your doing an undergraduate degree in the Philippines, then going into work and leaving work to go back to study. What factors do you think account for why you made all those changes?

Interviewee: Maybe it was because I didn't have a definite career plan from the beginning, so I tried to ah...

Greg: Exploring by hit and miss?

Interviewee: Yeah exactly. You can call it that.

Greg: Okay. Therefore do you think if you had had a bit more career information when you were back in high school, you might have been a bit more definite about your directions?

Interviewee: Yeah, exactly.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Especially given that you are here in an Australian university, your comments about you wish there was a bit more career information available.

Interviewee: That's why I wish there was more industry exposure.

Greg: Do you think that would give you more an insight into going into that field?

Interviewee: Exactly, yeah.

Greg: Okay.

Interviewee: I don't mind an internship for the Masters degree.

Greg: Yeah.

Interviewee: Yeah.

Greg: Okay. Thanks very much.

Greg: So when...between your undergraduate degree and your current degree, what types of work did you do?

Interviewee: Ah...I worked for a bank, and I worked for a consultancy firm...ah...and then I worked for the...ah...I worked for the clothing industry as well for a while...

Greg: Oh, okay.

Interviewee: Which totally were not related to, you know, the undergraduate course but because I wasn't sure which career path I was supposed to take so I was just trying out ...

Greg: What sort of timeframe was there between you finishing your undergraduate degree and starting this degree?

Interviewee: Ah...7 years, yeah.

Greg: Okay. Thank you very much,

Interviewee: Case (7)

Greg: Case 7, can you give us your full name please.

Interviewee: My name is ...

1 Did you receive careers advice at school (high school)?

Interviewee: Most of them said you can either study locally or go abroad. Your career prospect, if you study abroad and learn English are advanced.

Greg: Okay. So they sort of almost encouraging you to go abroad.

Interviewee: Yeah.

Greg: Okay. Good.

Greg: That advice was it at the very end of your schooling in Malaysia or can you remember that you got that sort of information in several years of schooling?

Interviewee: Um...you can say even from primary school time you kids are probably going to go overseas studying by secondary school. There will be emphasising something like that. If you have a chance to go overseas study they encouraging us to study abroad.

Greg: Okay.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Ah...it was mainly about my all O levels of physics and maths I was very good at those subjects. I am interested in cars and something like that.

Greg: So it was because the subjects you are doing here and interest in cars.

Interviewee: And mechanical stuff.

Greg: And mechanical things, so those two things. Can you remember any person who might have bearing on you going overseas?

Interviewee: Ah... my parents always expect me to go overseas I had three elder sisters who all studied abroad.

Greg: Okay. They expected you going overseas.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Interviewee: Yes.

Greg: Okay then. I suppose that's because your degree is in engineering and you are in your last semester of a four year program. Okay.

Greg: Yesterday I interviewed a number of students from you faculty, when I was down in the faculty I saw a notice about someone from Transend coming in early this week. So in the time you have been in Tasmania, not sure, you have been here for four years or?

Interviewee: Two years.

Greg: Oh two years. I will come back to that. In those two years have you been to any presentation where someone has spoken about engineering.

Interviewee: Um...

Greg: From the industry or other area?

Interviewee: Yes, I guessed there were a few. We did the interview with engineering people, but I can't remember anyone. Not really much talks from the industry.

5 Does your degree studies relate to your intended career?

N/A

6 Is your degree recognised in your home country?

Interviewee: Yes, it is.

Greg: And I noticed from here that you are from Prime College.

Interviewee: I was originally from Malacca.

Greg: Right. Okay. And you have been here for a two year program so is this linked to a twinning program from Prime College?

Interviewee: Yes, it is.

Greg: Okay. So you did your first two years at Prime College, and then came here for third year.

Interviewee: Then I went to KL to study.

Greg: Has that presented a problem for you?

Interviewee: Um...at the beginning, maybe a little bit, but now coping pretty okay.

Greg: Would you mind telling me a bit about what the problem might have been at the beginning?

Interviewee: Um...what the problem might have been... probably different ways of teaching.

Greg: Right. Teaching style?

Interviewee: Yeah, teaching style. But once you get a hang of it...

Greg: So wasn't English?

Interviewee: No, it wasn't English.

Greg: Your English seems fluent to me.

Interviewee: Ah, thank you.

Greg: Ah...so yeah, apart from teaching style, was it the expectation of the lecturers and tutors and also maybe assessment methods.

Interviewee: Assessment methods and the expectations from the lecturers here are higher than...what was expected in Malaysia.

Greg: Right. Okay.

7 Have you received careers advice at your current University?

Interviewee: No.

Greg: Not even for holiday employment information or part time job information?

Interviewee: Ah... no, not really...intending to work part time.

Greg: Okay. Within your engineering program, was there an internship where you had to go and do an industry placement?

Interviewee: Yes, there was.

Greg: And can you tell me what the name of the company was?

Interviewee: Ah... it was back home in Malaysia, 'National Semiconductor'.

Greg: Right. 'National Semiconductor'. Did you have to find that or did the school of engineering help you find that?

Interviewee: Ah... School of engineering would help you with job employment within Australia. But if you want to go back you can actually do that.

Greg: Okay. How long was that placement?

Interviewee: That was for 11 weeks. The duration was 12 weeks but then generally accepted 10 weeks.

Greg: Okay. Was that last year or this year?

Interviewee: Last year.

Greg: Okay. And did that help you confirm your decision to go to be a mechanical engineer? Or did that raise doubts your mind?

Interviewee: Not really. Because I was thinking about the semiconductor industry. I was wondering what am I doing here as a mechanical engineer.

Greg: So that actually helped you broaden your idea of your future.

Interviewee: Yeah, I was thinking of doing something with machines and I did not know it had anything to do with semiconductors.

Greg: Would you like to explain that to me what is the relationship between semiconductors and mechanical engineers.

Interviewee: The mechanical engineers are similar to the semiconductor business... We need to design packaging. How big, how thick it had to be.

Greg: Is this National Semiconductor a very big international company?

Interviewee: Yes, it is.

Greg: I thought it was the same one. I'd better confirm it. So they have lots of employees there?

Interviewee: They have 2000 or something like that.

Greg: At that one site?

Interviewee: Yeah, in one site.

Greg: Okay then. All right.

8 What do you understand by the term credit-transfer?

Interviewee: Credit-transfer transfers...credit...accept credits from Prime College.

Greg: That's what happened to you, isn't it? Did you actually end up with a qualification from Prime College after two years or was it all part of a two year program where you were sort of end up coming to Utas.

Interviewee: I did have a certificate of diploma... I can't use it to go to work, because it is not recognised.

Greg: Only information.

Interviewee: Yeah, no use.

Greg: Just a piece of paper showed that you spent some time there. It doesn't mean anything in terms of getting a job as an engineer.

Interviewee: Yeah, I don't think I can get a job at a respectable company.

Greg: Okay then.

9 Who told you about credit-transfer?

Interviewee: I probably found that out, as I said my sisters all went abroad, so I had a fair bit of idea about credit-transfer system.

Greg: Okay. And what happen to you after November, hopefully you finish your course, are you intending to go back to Malaysia or you indicated a moment ago that you might spend some time here. You plan to get PR?

Interviewee: I intend to go back but for three months, maybe I will do some, ah spend time here... and watch how they celebrate Christmas.

Greg: So that's your intention to go back to Malaysia. To Malacca or KL?

Interviewee: It really doesn't matter.

Greg: It really doesn't matter. Wherever you can get a job.

10 Any other comment on careers.

N/A

Interviewee: Case (8)

Greg: Case 8, just for the tape, can you give me your full name.

Interviewee: Ah, my name is

Greg: Thank you.

1 Did you receive careers advice at school (high school)?

Interviewee: Ah, I think we had something like that but I think they had a pretty clear idea. So that was not something that all of us would be told something, but it's rather something like a career adviser. People who were not sure what they have studied in terms of getting appropriate education for what kind of work. So the career advisers have them decide what sort of degree they suppose to do and get ready for that kind of job.

Greg: Okay. You just said you were fairly clear is that because you had an interest in particular subjects or why would you feel clear about which direction you would go with your careers?

Interviewee: Um...yeah partially I said that I think that ... because I was quite a lot influenced by my friends. So, yeah, because my mum owns a software company, that also... I think that they developed their interests because I got some business experience during the time when I was in high school or college. Before I was like 19 I was working for almost 3 years like a part time programmer. So I got quite a good idea at a high school.

Greg: So that was with your mother's company, was it or not?

Interviewee: Ah... mostly.

Greg: Mostly. So were you doing that work as a programmer part time or did you leave school and do programming?

Interviewee: No, no. It was part time. I have been studying all the time until now without any interruption.

Greg: Okay.

Interviewee: Major courses actually...

Greg: Okay, thanks. Um...recall just going back to what you did recall about career advice back in high school, ah...can you remember if your school did have someone in that role full time or was it just someone part time or was it just someone who did that along with lots of teaching.

Interviewee: I think the last one would be the most appropriate description of that. Ah... I think there were not many connections between schools and any businesses, and there wasn't really, ah..., not sure, I can't really remember anything like that. So I think there wasn't anything like that. But one of, ah..., because I was studying in like a high school or college which was already specialised for IT.

Greg: Oh Okay. Right.

Interviewee: So all of us already had a pretty good idea about what we wanted to study, also... there were 32 of us and I think that 5 or 6 didn't end up studying computer-related programs. So, yeah, that's most of us, basically continued studying IT, Informatics or some kind of engineering.

Greg: Okay then.

Interviewee: I think that in our case... although it was still quite ...education it was focused quite a lot so I think people really didn't have to get some advice. They could go something like that.

Greg: Yeah, sure.

Interviewee: But I think that sort of cooperation... university was not very good but they said we have done. We got to go like national week of science where students from high schools come over to see what we were doing, what experiments for research and what unit studying was all about. That sort of stuff like that, although we had one unit was taught by university teacher in university classroom. So... it was no cooperation at all but I think cooperation could better presenting the opportunity of where to go. They were showing one option.

Greg: Sure, okay.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

N/A

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: You might go into being a manager in an IT company, is that still the idea.

Interviewee: Yeah.

Greg: Okay then.

5 Does your degree studies relate to your intended career?

Greg: Ah... your degree relates very much to that goal, do you think doing the Master help you achieve that goal?

Interviewee: Um... yeah, I think so. Although the perception of a postgraduate degree in Europe is quite different from Australia. For example, if I have just a bachelor, I will be perceived as someone who was not able to finish the Master, because most people in Europe, or I should say home, have finished masters. So that was one of the reasons I try to get my Master as well. But as I can see now, sometimes I have the feeling that I am getting over-educated, I tried to apply for a new job since I had to apply for a really good job to be able to get in, because one of the people think that I am sort like... would probably get... money soon or better job soon.

Greg: So they are saying you are over-qualified.

Interviewee: Yeah, something likes that.

6 Is your degree recognised in your home country?

Interviewee: Yeah, probably.

Greg: Probably. You are happy to do a degree without knowing whether it is recognised?

Interviewee: I don't think that it really matters, because I think that at least home the perception is like that even if your course is not recognised, then you get more points in some interviews that you got a degree from overseas.

Greg: Yeah, sure.

7 Have you received careers advice at your current University?

Interviewee: Yeah, that actually, I think they spoke quite well. I went to a few seminars. I can remember one which was organised by LogicaCMG, and then there was... that actually was as part of third year project. And there was a two hour long seminar about how you should get ready for interview and what stuff should be included in your resume and stuff like that. That was interesting. I also went to a job fair, I think?

Greg: Yes, yes. Here in Hobart?

Interviewee: Yeah.

Greg: At Wrest Point?

Interviewee: No, that was in Union building this year, maybe it was last year. I can't really remember. I think it was this year. The only issue I had was that most of companies were really big companies like multi-national companies. Most of them have offices on the mainland. I think the uni, sort of like our said, that it was against our strategy because they... I think they would like to get more students in the future like they have now. But if they have all the students to go on the mainland or anywhere else, then... just a little proportion of the graduates less educated people will stay here and that won't bring investment and stuff like that.

Greg: When you were talking about applying for jobs, were you applying for jobs in Australia or were you applying for jobs overseas?

Interviewee: Ah... just in Australia... a few times. Just to give it a try.

Greg: Oh okay. Okay.

Interviewee: But, um..., at the moment I am working on a new business. General Manager Ecotourism. Business has not generated enough money yet. I am working for free at the moment.

Greg: Is that based in Tasmania?

Interviewee: It is based in Hobart.

Greg: Okay then. All right.

8 What do you understand by the term credit-transfer?

Interviewee: That means if I decide to move somewhere else I can get credits for the units I finish here or some other university.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Yeah, that's fine. Um... after I mean... I suppose for the tape I'd better summarise that you are doing a master at the moment has both course work and a minor thesis, is that right or not? Or is it most course work?

Interviewee: It is a Masters by course work. Although 75 percent of the time will take me to do the courses but as I said before 60 percent of the final mark is based on the thesis, not on the course work.

Greg: So what would happen come November? What do you think are your plans then?

Interviewee: Um... I'd probably be applying for permanent residence next month.

Greg: Right.

Interviewee: Because I'd would like to have a Limited company or start my own business. I really find it hard. I really like to stay in Tasmania, and I find it quite hard to find some relevant or interesting jobs. So for me it is also quite challenging to start your own business than being an employee.

Greg: Yeah. So in fact, you create your own employment.

Interviewee: Yeah, yeah.

Greg: Creating your own career pathway.

Interviewee: Yeah, yeah. I think for me it is really more interesting rather than having some jobs because I seen in a Czech movie one guy say that a successful young man is not looking for a job but rather creating jobs for other people.

Greg: Yeah.

Interviewee: I think that is something that I have got as my own goal.

Greg: Yeah, sure. Okay then. Thanks very much for that.

Case 9

Focus Questions

1. Did you receive careers advice at school?
 2. If so, what was the level of advice, quality and did it help or benefit you?
 3. What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?
 4. Does your degree studies relate to your intended career?
 5. Is your degree recognised in your home country?
 6. Have you received careers advice at your current University?
 7. What do you understand by the term credit-transfer?
 8. Who told you about credit-transfer?
-
- 1) Yes. This is true particularly when we are going through seminars and talks provided by certain professionals and individuals invited on certain session. Well, for myself, I seldom attend these functions since I have much things to do. And hehe... I think this is not a good excuse though.
 - 2) Hmm... They were good and to my opinion, they helps. This is important when they were to focus on building a well understanding of future personal development and career paths or direction. However, I would stress that the basic component in education would be much of a credit to my point of view. I would like to have a rather good handling in subjects and concepts I learned compared to the extrinsic subject we are discussing about now. If we are to be a mess over the studies here, there are no point to care for any other things lies in the future. Sorry to mention about this, perhaps I myself should look farther rather than focussing the short-distance matters.
 - 3) My career intention is to be a civil engineer. Well, I can't say that I have to totally change my career path. But to the moment now and then, I felt shaky. This is more or less due to the teaching environment and attitude conducted by the local system here. Some lecturers would have just mention and briefly discuss several general concepts without willing to let us discuss and learn more deeply. They expect us to go through almost all of the entire course and yet we are fresh. Yet, what is the difference to pay the fees in order to buy a seat in the lecture room...haha. Of course, we would try our very best to learn and research but really, to nowhere this

can go? Apparently, time is of essence. We didn't expect lecturer to give tips or more we can say 'spoon-feeding', but at least have a thought of conscience to teach and giving more information and examples that could boost our confident and interest in studies. I am not mentioning all of the lecturers here but some. Also, I didn't really know how well other universities such as Adelaide, Melbourne and etc are going on now. Somehow, things really get frustrated over here.

Perhaps I could refine my statement that more accurately, international student could hardly cope with the overseas education system which expand broadly and particularly focussing on individual talents. Lots of confusing might be going around us since what we learn does not conform to any positive response. We didn't know what we are doing sometimes. For example, in my civil engineering course, we are asked to design a structure suppose. Some lecturers didn't even want to talk or give more as if we ourselves knew everything. Later, the assignment or report marked received didn't have much or no response at all to its detail concept. Can one imagine what would be the result when we are going into our career industry. I hardly believe one can do well within these conditions since he himself doesn't know what is wrong or correct to its truth. This is the incidence happening down here. I don't know how others are going on out there. Please forgive me for the straight and direct wording, Greg.

- 4) I hope so. Comparing the University of Tasmania with many others. I think that we learned really few things and most of these are history. Many new concepts and technology such as software and etc arise these days and I can feel that we are really left behind. Somehow, I really think that money paid for worth its own amount. ☺
- 5) I didn't know much about it. But to my knowledge, I had asked this before from lecturers and education units in my home college. I have friends and colleagues who studied in Australia before and are working in companies in my hometown now. Well actually there are some point that I am wondering now and then.

Actually, I come from Malaysia, Greg. Not Sri Lanka. Hehhaha....nevermind. Well the problem is that my home country uses the British Standards. Initially, when I came to Australia, There is a big clash with what we learn here compared to the British Standards we learn before. I slowly, adapt to the environment here. And I can't imagine when I would be back home soon, having need to turn and squeeze my mind again in order to renew my learning. Maybe what I have learned here would be of no use anymore. I still doubt that.

- 6) No, not yet so far. And I have no intention to. :p

7/8) Hmm..credit-transfer? What you mean is the transfer of my home country education standards converted to the Australian in unit of credits comparison, is this what you mean? If so, I have heard this before from my previous education department. Yes, indeed, all of us who come here before have to conform to this necessity in order to determine the suitable level and course units taken. Personally, I think that this standard doesn't reflect much on the performance of international

students particularly to those who just manage to pass or going through average point. The Australian education standards and method of teaching system is far too high to make a reasonable comparison. The product of what we can oftenly see is the poor results happening among average international students (except those who came in with extreme credits and intelligence, but very few) This is the truth, Greg. And again, this is another culture conflict. Oppositely, if we can see that if international students are to be taught since young through the local system here. I am sure to say that they would be much better of course. And that would reflect the good use of twinning programs but unfortunately, the government of Malaysia has eliminated this wonderful thing.

9) Well, for your knowledge, this is my final comment. The education standard in my home country, Malaysia is very much different with the Australian over here. We learn many subjects when we are young in order to crank out the talent among various students. But the authority failed to do so. We still learn many subjects such as Biology, Physics and others perhaps in high school without given the opportunity to let our personal interest reigns. We learn more than 3 languages (such are Malays, Chinese, English, Hakka, Fookien, Foochow, Cantonese, Ibanese, Hookien, and much much more) Most of us are mixed minded..hehahahha!

Our main and real interest only came in during college time but to nowhere, this only happen in 1 to 2 years. Therefore, our foundation wouldn't be that good compared to the locals here. Without twinning program, what we learned in college are just minor concepts and they jump up and down disorderly (which can't be match well with subjects taught here); yet they are British stuffs.....now I do not need to mention more, one can see what would happen if we came here, it's exactly new and blank brain in routine environment.....:D (hahaha...I can't imagine)

And there is one main point I would like to share about. Yet there are too common. Well you see, students over in Malaysia particularly those wanted to go for overseas studies are rich enough. Families want their children to strive for their future that might contradict with their interest somehow. They can afford to study anything they want. Also, they want good education that promises a better career and future. In certain period normally these days, they would choose business and engineering. Hence, everybody go for engineering. Private colleges earn the benefits. Some have to yield more that they came out with attractive course prices and many more combinations! This has become a trend...no joke! Talented and non-interest student go for the courses regardless of what their interest is as long as they have the money. Eventually, this end up in lots of crisis such as subjects/ units failures here and there. Parents and students complains and the educational unit then have to come out with promising marking and awarding structures that make all people happy. So you can see why some credit-transfer is useless over here! Finally, most people could afford to end up at least in Australia or perhaps some extreme handful of gold going into England. All they want is the certificate to earn a better living in home country. Where is the quality of education standards then? I think it is being abused wisely....:D

However, I think that the education of Australia is still far to recognize the common matching problem with its branches in most part of Asia. Not until I myself see the whole picture happening in other universities around. My point of view might be too narrow for the moment. But one institution is enough to draw things down, I guess so. There is much things and improvement need to be done if we don't want to see anymore suffering and wasting of money (fees) happen in the future.

Well, that's all for the time being. I am glad to give and share more with you. Anyway, thanks for your questions and in the glory, grace and ,mercy from Heavenly Father and Lord Christ Jesus; may your works and research yield good results.

Thanks,

....

Interviewee: Case (10)

Greg: Case 10, for the tape, can you give your full name.

Interviewee: ...

Greg: Thank you,, I got a few questions I would like to ask you.

1 Did you receive careers advice at school (high school)?

Interviewee: Yes.

Greg: Okay then. Was that advice about potential occupations or jobs or was it about future courses of study?

Interviewee: It was more about further study in overseas.

Greg: Okay then.

Interviewee: Not much about jobs, it was more on studying.

Greg: Study options. And can you remember what year level? Was it in last year of your school or would it have been several times?

Interviewee: Um...it was more focused on final year students (*in my school, its senior middle 3 i.e. Form 6 in government school*), but if you like, um..., from five you can also take part.

Greg: Was it part of the school you were at? Or government school?

Interviewee: Ah...my school is a Chinese – Ed private school.

Greg: Okay. You have already answered the first part of the question here about year level. Can you quantify how much time or would you just have a conversation with a teacher? Can you sort of explain to me what the process might have been involved?

Interviewee: Ah... it is actually like an education fair.

Greg: Right.

Interviewee: And it is organised by our school where representatives from each institute and even overseas institutes. They just come over here and talk about interested students, introduce courses, conditions and stuff like that.

Greg: Okay. Thanks.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Um... I didn't decide to do Engineering at first, because I couldn't choose anything else, thought of doing Science, options are like Medicine, Engineering, or Computer Science, or Computer, and I am interested in doing medicine or other computer stuff. I think I was good at Maths and Physics so that's why I chose Engineering, because it's more Maths and Physics application, and it is also...I mean it is easy to get a job if you have an Engineering degree.

Greg: Okay then. All right.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: On one hand you said you want to be an engineer, but on the other hand you want to open a coffee shop. So I have visions of a coffee shop with all sorts of engineering things around it.

Interviewee: I said I want to open a coffee shop with a couple of my friends after we have a stable job and income, so we will get together and open a coffee shop.

Greg: You still want to be an engineer?

Interviewee: Yeah.

Greg: And you also want to have a coffee shop, just an extra interest.

Interviewee: Yeah, it is just an interest.

Greg: A part time interest. Okay then. That's fine. Do you know what sort of engineer?

Interviewee: Um... I am doing civil now.

Greg: Civil, civil engineering. Okay then. Thanks. Um... so your degree at the moment, is it the civil engineering stream?

Interviewee: Um...it's not really into it yet, because we just choose our major this semester so I think next year will be more detailed more going into...

Greg: What year are you in now?

Interviewee: Second year.

Greg: Second year. Okay. So next year when you choose your stream. Oh okay then.

5 Does your degree studies relate to your intended career?

N/A

6 Is your degree recognised in your home country?

Interviewee: Um... yes. Actually I applied to IDP, which is the representative of all the universities in Australia and other countries.

Greg: Yeah. Okay then. They assured you that it is recognised.

Interviewee: Yeah.

7 Have you received careers advice at your current University?

Interviewee: Um...no.

Greg: No? Not even going up to the careers office to find out about holiday or vocation employment?

Interviewee: I have just been to the career hub website.

Greg: Right. Yeah, yeah. And that's their website.

Interviewee: Yeah.

Greg: Did that help? Was that useful?

Interviewee: Um... it is quite useful.

Greg: Did you get a job?

Interviewee: Um...not today.

Greg: No. You got a job, didn't you?

Interviewee: Yeah.

Greg: Okay then. All right.

8 What do you understand by the term credit-transfer?

Interviewee: Yes.

Greg: Can you explain that to me?

Interviewee: It's like you can do a few units from other institute and transfer your credit to...

Greg: To somewhere else. Okay then. All right.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Is there anything about your decision to come and study in Australia from Malaysia, your decision to do engineering, or anything else related to careers that we perhaps haven't covered so far?

Interviewee: Um... I think it might be a... because when you come overseas you will learn more, and it also depends on whether you can afford to go anywhere you like because if you go to like US or UK, it is more expensive, whereas here it is more affordable for students.

Greg: Okay.

Interviewee: The truth is that they offer scholarship.

Greg: Did you get a scholarship?

Interviewee: Yeah.

Greg: Okay.

Interviewee: International scholarship.

Greg: Is it a partial scholarship off your course fees?

Interviewee: 25 percent off.

Greg: Course deduction in your fees. Okay. All right. Thanks very much.
Thank you for participating.

Interviewee: You are welcome.

Case 11

Focus Questions

1. Did you receive careers advice at school (high school)?
NO.
2. If so, what was the level of advice, quality and did it help or benefit you?
3. What prompted you to undertake your current course?
THE NEED TO FURTHER ENHANCE MY KNOWLEDGE AND EMPLOYABILITY.
4. What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?
UNFORTUNATELY I HAVE NOT BEEN ABLE TO SECURE A JOB AS YET.
5. Does your degree studies relate to your intended career?
YES.
6. Is your degree recognised in your home country?
YES.
7. Have you received careers advice at your current University?
No.
8. What do you understand by the term credit-transfer?
THE TRANSFER OF CREDITS OBTAINED FROM UNIYS STUDIED.
9. Who told you about credit-transfer?
THE COURSE CONTROLER.
10. Any other comment on careers.
SORRY FOR THE LATE REPLY MATE.

Interviewee: Case (12)

Greg: Case 12, for the tape, can I get you to say your full name?

Interviewee: Um...the reception is very bad, I guess...excuse me!

Greg: Yeah, the reception you mean?

Interviewee: Yes, um...you can actually ring my home number?

Greg: Yeah, sure, sure...

Interviewee: Okay.

Greg: What is that number?

Interviewee:

Greg: Okay. I will ring back in a moment. Thank you.

Interviewee: Okay.

Greg: Case 12, can I get you to say your full name for the tape, please?

Interviewee: Okay. My full name is ..., my surname is

Greg: Okay then. Thank you very much. I did email you some questions I don't know whether you have seen them or not.

Interviewee: Yeah, I have looked at it once.

Greg: Okay then. Now you did a survey nearly a year ago...

Interviewee: Yeah.

Greg: That you would have received it from me through Monash University International, so what I have done is at the end of last year I collated all these statistics and spent time ...I sent that off to have statistics analysed, so it's part of my methodology. What I am doing now is I am interviewing some of the people who filled in the survey because the survey gives you the statistics but it doesn't help you understand why people said what they said.

Interviewee: Okay.

Greg: Okay?

Interviewee: Yeah.

Greg: Alright. So the questions...I start with the question one...um...you are from Hong Kong, aren't you?

Interviewee: Yeah.

Greg: Yeah.

1 Did you receive careers advice at school (high school)?

Interviewee: Um...I think before, like...um...it's around year 8 in Hong Kong...

Greg: Yeah, okay.

Interviewee: Yeah, I mean year 8 in Australia...um...in Hong Kong they will have like...um...a change of subjects?

Greg: Yeah.

Interviewee: Which is...um...for the exam of Hong Kong Certificate Exam, which is like the VCE in Australia. So at that time, I had kind of like career advice of choosing options...or the university you go in...that sort of advice.

Greg: Okay, so it was more course counselling.

Interviewee: Yeah, I think so. Yeah.

Greg: Can you remember the time whether when they talked to you about subjects, did they also mention possible careers, or occupations?

Interviewee: Yeah, they do. Yeah, like...um...if you do like...um...Science or Chemistry maybe you could be a chemist or you know you could do pharmacy you could be a pharmacist back home.

Greg: Okay then.

Interviewee: Yeah.

Greg: Ah...at that time were you thinking of coming to Australia, or did you make that decision later?

Interviewee: Ah...actually...um...I think of studying overseas even when I was in high school, so...um...I first started thinking of going to...um...UK, but later on I came to Australia because it is a cheaper choice...

Greg: Yeah.

Interviewee: Yeah...ah...I would say I was thinking of coming here for that.

Greg: Okay then. Well that leads into our next question which is...

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Greg: What sort of factors led you choosing your current course?

Interviewee: Um...I am actually doing Art/ Science, which...um...because at that time I haven't thought of like...um...what I really want to do in the future, so I sort of doing like...Media Communication in Arts and doing Psychology in Science...like what I do. So...yeah...I think that's what drives me to choose like a double degree course.

Greg: Okay then. So in some way that double degree choice is giving you the option of keeping your career open, isn't it? I mean...

Interviewee: Yeah, yeah. More flexible I would say.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Yeah. Okay then. Now in the survey which, of course, I forgot to open before I rang you, so now I am looking for it. Ah...12 months ago you would have indicated a particular career that you thought you would be going into...

Interviewee: Yes.

Greg: And I am just about to find what you said last year...bare with me one minute...right, now, a year ago you thought you would be a psychologist...

Interviewee: Yeah, right.

Greg: You still thinking that is what you might be, or?

Interviewee: No, no, no, definitely I would not, because being a psychologist; my mark is not enough to get into like...postgraduate psychology...

Greg: Right.

Interviewee: So...um...I would say that like...in my start of this year which is my third year, I actually changed my career mind so I am not doing...not wanting to be a psychologist, but I want to work in a communications field which...um...like a corporate communications that kind of stuff. I think that I am more interested in, you know, media communications, rather than Psychology throughout my years of study.

Greg: Okay. So basically you decided that because your academic background is not strong enough in Psychology that...

Interviewee: Yeah, also it sort of interests me in my...like later on...

Greg: Yeah.

Interviewee: In first year and second, psychology is, I would say easier, so it is interesting. But later on it gets more into statistical and experiment stuff that which...I am totally not interested into it at all.

Greg: Yeah. Okay then.

5 Does your degree studies relate to your intended career?

Interviewee: Um...I think like...my idea of doing like...um...communications is not about my double degree, it is...um...it's like...um...rather a first...um...like a job search website or like some...um...I went to employment fair and that makes up my mind.

Greg: Okay then. Um...

6 Is your degree recognised in your home country?

Interviewee: Oh, yes, sure we do.

Greg: Okay. I just...you know...one of the questions. A couple of people said that I am not sure; I said that is a bit strange given you are in your second or third year of your degree...ah they haven't checked.

7 Have you received careers advice at your current University?

Interviewee: Um...no, I would say no. I didn't ask for any advice at all.

Greg: Not even, say, holiday or vacation employment or anything like that?

Interviewee: Ah...um...I did kind of like...you know...they got a like...a job search database in Monash that is the only thing that...ah...yeah...I go in and have a look, other than that I didn't really get any advice.

Greg: Okay.

Interviewee: Difficult I would say, but...

Greg: Sure.

8 What do you understand by the term credit-transfer?

Interviewee: I do.

Greg: Okay. Can you tell me what that means quickly?

Interviewee: Ah...yeah...it's like...um...you did a tertiary education before, some people go to another uni or did a like...maybe a further study so they got the credit which is exactly the same subjects they did two different...um...institution I would say, so you got the credit transfer later on and you don't have to do that stuff again. That's what my understanding is.

Greg: Yeah, sure.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Either in planning your course from Hong Kong to come to Australia, or any comment you want to make about the course you have...

Interviewee: Yeah...um...say something about the courses differences in some international like...um...from some Asian countries and also from Australia...

Greg: Yeah, sure.

Interviewee: Yeah...um...cause...like...um...I asked my friends who are doing like...um...in Hong Kong, I would say that, you know, in Asian country the course system is very different from Australia. Australia is more academic-based which they teach a lot of theories and kind of stuff but in Asian country they are into practical...um...yeah...they do more practical stuff like...um...you do a Media Communications, they would teach you how to write media , public relation stuff like that. In Australia, which Monash, they teach theories like criticising media which is very different from Asian approach.

Greg: Sure. Case 12, you are at Clayton or which campus are you in?

Interviewee: I am in Clayton.

Greg: Yeah, okay, cause that's one question I forgot to ask other people I have spoken to from Monash.

Interviewee: Okay.

Greg: Because, ... , Monash includes many different campuses.

Interviewee: Yeah, they all...their courses are very different.

Greg: Yeah And. Yeah. I might have to ask other people that.

Interviewee: Yeah.

Greg: Case 12 thanks very much. I will just turn the tape off before I finish talking to you.

So, Case 12 you said you are planning to stay here for two more years?

Interviewee: Yeah, okay. The situation is I told you before that I am doing arts and science but...um...at the start of this year, which is my third year I changed my career which I am not wasting one more year on doing psychology anymore so I kind...I apply for early exit which I only sit for by having Bachelor of Arts.

Greg: Right.

Interviewee: So...um...because my mum is like, you know, my mum said doing a double degree and a postgraduate degree .She can't say that. I would rather, you know, choose either doing a double degree or further study, so I apply for early exit and this year will be my last year so and...um...a couple of months ago I applied for a postgraduate...

Greg: Yeah.

Interviewee: Which I think...which...like...give me conditional offer and I would like to see whether my, you know, my final result will be sufficient to get into the postgraduate course I want.

Greg: Okay. And...so...you would probably head home to Hong Kong in a couple of years time, or would you apply for PR?

Interviewee: Um...I don't think I would apply for PR, because the condition for PR is to stay in Australia continuously for two years...

Greg: Yeah.

Interviewee: Yeah, within five year and I gather in Australia it is very hard for non-Australia background to find a decent job I would say. Yeah...so I would probably work in Hong Kong because it is easy for me to get a better job I guess.

Greg: Yeah. Okay then. Thanks very much for your comments.

Interviewee: Okay. Australia is very traditional; they only look for the name of institution...

Greg: Yeah.

Interviewee: So they don't really look at, you know what course you are doing or, you know, you have done in the course.

Greg: Right.

Interviewee: So the main focus is that... I guess it is good institution, it is international recognised. Market themselves well, so I guess because it is so well known that some student might just do the course because of the reputation of the institution but not because of, you know the content of the course I would say.

Greg: Yeah.

Interviewee: Yeah.

Greg: Okay then. Well, thanks very much for your participation I really appreciate it.

Interviewee: Okay. Thanks a lot.

Greg: And good luck with your future studies too.

Interviewee: Okay. Good luck to you too.

Greg: Thank you. Bye, bye.

Interviewee: Bye.

Interviewee: Case (13)

Greg: Case 13, can you say your full name for the tape, please?

Interviewee: Say my what, sorry?

Greg: Can you say your name for the tape?

Interviewee: Okay. Oh, my name is

Greg: Okay then. Thank you.

1 Did you receive careers advice at school (high school)?

Interviewee: Um...I am not at the end of my study???, and I hope I can and...after I finish the course I will get a job as a System Analyst.

Greg: Okay, and when you were in Hong Kong, did anyone give you any careers advice?

Interviewee: Um...normally they give orientation, the company's staff can go to the exhibition centre and ask them a lot of questions about careers.

Greg: Okay then.

2 If so, what was the level of advice, quality and did it help or benefit you?

Interviewee: Yeah, it is very helpful, and I can get more information about that.

Greg: Okay.

Greg: And did you tell me before that you went from school into the workplace before you came to Australia to do your degree?

Interviewee: Ah...sorry, I beg your pardon, please.

Greg: It in...when you were in Hong Kong...

Interviewee: Yeah.

Greg: ...after you left school, did you go to work before you came to Australia to do your degree?

Interviewee: Um...after I finished my secondary school, I had a...I had been working for a long time and then, and then I started my degree courses at Monash.

Greg: Okay then.

3 What prompted you to undertake your current course?

Interviewee: Because I am interested in computing, because...and also all the jobs involving computer, so I study this course.

Greg: Okay then. And 12 months ago, when you did the survey for me you said you might be a systems analyst when you finish, do you still want to do that type of job?

Interviewee: Yeah, I would. I would like to do that.

Greg: Okay.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Interviewee: Um...I said I would do that, because when I started this course, it is just a basic concept about that, but I need to earn more experience about that career.

Greg: And in your current course, is there an internship or do you go in to the workplace at any stage of your course?

Interviewee: Sorry, I beg you pardon, please.

Greg: Ah...in your current course...

Interviewee: Yeah.

Greg: ...is there an internship, or a section of the course where you go and do a project in the workplace?

Interviewee: Ah...no, I don't think so.

Greg: So...So your current course is very theoretical, is it? It's not very practical?

Interviewee: Um...not really a lot of practical, it is more theoretical than practical.

Greg: Okay.

5 Does your degree studies relate to your intended career?

N/A

6 Is your degree recognised in your home country?

Interviewee: Ah...it can be recognised...

Greg: Okay.

Interviewee: Ah...after I finish this course and got my degree.

Greg: Yeah. And at the moment...

Interviewee: There is not a lot of jobs for me to do a like...systems analyst in Hong Kong.

Greg: Yeah. Do you want to comment on that?

Interviewee: Sorry?

Greg: Do you want to comment on the opportunity for you to go in to the workforce in Hong Kong?

Interviewee: To go to the workforce?

Greg: Yes, you were saying that there is not a lot of opportunity...

Interviewee: Yes, actually this job....systems analyst is not...ah...is a lot in...in the...in the all of the computer field companies. This job is only...only have in the large organisation and normally ..., because I have no work experience, they will not employ the person as a systems analyst without any experience. So there is no a lot of chance for me to do that.

Greg: Okay then. Thank you.

7 Have you received careers advice at your current University?

Interviewee: Yeah, after I finish the diploma course...ah...they give some advice about this course and careers, so I have an idea about that.

Greg: Yep. Okay then. And...um...

8 What do you understand by the term credit-transfer?

Interviewee: Yes, I understand that. Credit-transfer means if I got some credit from another faculty or any other universities, other courses I can use my credit to transfer to the university I want.

Greg: Okay. Thank you.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: My last question is have you found that there have been differences between...ah...Hong Kong and the Australian education system that you would like to comment on?

Interviewee: Ah...there are not a lot of differences in the Australian education system...in Australia, the education is provide...ah...allow the students to learn more by themselves. In other countries, normally the teachers will provide all the information to the students. Here the teachers ask the students to find everything by themselves. It is too different.

Greg: Okay then. Any other comment that you would like to make.

Interviewee: Um...no, at the moment, no.

Greg: Okay then. I will just turn the tape off.

Interviewee: Case (14)

Greg: Case 14, can I get you to say your full name for the tape, please?

Interviewee: Ah.....

Greg: Thank you. I did email you some questions I wondered whether you have seen them.

Interviewee: Yeah, I got them.

Greg: Oh, okay then. That's fine then. Ah...since last year, you did the survey for me almost a year ago, and...since then I have collating the data, and what I have done now. Last week in Hobart I was interviewing some students face to face; this week I am interviewing students by telephone, just to get more information.

Interviewee: Oh, okay.

Greg: Okay.

1 Did you receive careers advice at school (high school)?

Interviewee: Not really.

Greg: Not really. Did you receive any information about going on to further levels of study?

Interviewee: Ah, yeah, I do.

Greg: Yeah. Okay. And was that mainly the end of high school or was that all the way through high school?

Interviewee: Um...at the end of high school...but I talked one of my teacher about the course I was going to do last year.

Greg: Okay. So it was mainly advice from a specific teacher.

Interviewee: Yeah.

Greg: Would you have described them as been a careers teacher or was it just one of the teachers that you talked to?

Interviewee: Just a Maths teacher. I was thinking to do Maths at the uni I was worried about the Maths would be really difficult for me at uni

Greg: Okay then. And at high school in Adelaide would there have been a careers teacher or not?

Interviewee: Yeah, there is one.

Greg: But you didn't actually see them at all?

Interviewee: No, but people like...I knew what I was going to do...I knew which course I was going to do so I didn't really need that advice at all.

Greg: No. You thought the advice from your Maths teacher was far more relevant.

Interviewee: Yeah.

Greg: Yeah. Okay then.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Ah...it is more about, like, personal preference.

Greg: Yeah, so in...

Interviewee: Also employment, I think...because I got time... I am not sure what should I do after university...I think probably a few months I will know...lead me to anywhere.

Greg: Yeah. Okay then.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: And with regard to your survey last year, you indicated that you thought as a career you might go into commerce, marketing, or international business.

Interviewee: Yeah.

Greg: Is that still the area you think you will go in to or have you changed your mind in the last 12 months?

Interviewee: I have changed my mind.

Greg: Oh, okay then. Can you tell me why you have changed your mind?

Interviewee: Yeah, because I said that...I thought was going to do that, then I realised that I didn't have the ability like some...the ability to do marketing or international business, and I found that Commerce course is too broad for me.

Greg: Yeah.

Interviewee: I want to learn something more specific knowledge that you can build up your skills.

Greg: So this change of mind also related to you doing your SACE last year

Interviewee: What result?

Greg: SACE result.

Interviewee: No, no. My results are high enough to go to everywhere (I got 99.35 last year).

Greg: Oh, okay then. Alright then.

5 Does your degree studies relate to your intended career?

Greg: Now your current degree is one of Finance and Maths?

Interviewee: Yeah.

Greg: Is it a Bachelor of Arts or what is the actual degree, or is it Bachelor of Science?

Interviewee: It's a Bachelor of Finance and Bachelor of Mathematics and Computer Science.

Greg: Oh okay. So that's a combined degree.

Interviewee: Yes, it is.

Greg: Oh okay then. You think that would be better related to your career intention?

Interviewee: Yeah. It is a program designed by Adelaide Uni.

Greg: Okay then. Alright.

6 Is your degree recognised in your home country?

Interviewee: I think so.

Greg: You think so?

Interviewee: Yes.

Greg: Okay then.

7 Have you received careers advice at your current University?

Greg: Um...while you being at uni, this must be semester two at uni, is it?

Interviewee: Yeah.

Greg: Have you got any careers advice at the uni either from the careers office, and or from your faculty, or the department?

Interviewee: Ah...I would say "No".

Greg: No.

Interviewee: No, because I want to get a handbook from the faculty and then see just the basic idea.

Greg: So you haven't talked to an international student counsellor or anyone like that about the course.

Interviewee: No, because I am doing that double degree and then this year I am doing eight subjects and then some of them are compulsory.

Greg: Yeah.

Interviewee: So I don't have much to talk about them.

Greg: No, no. They are all mandatory.

Interviewee: Yeah.

Greg: Not a lot of choice.

Interviewee: No.

Greg: No. Do you have more choice later in the degree?

Interviewee: Oh, yeah. I think so and I am thinking to seek advice from counsellor...to talk about my next year subject.

Greg: Yeah. And which option to pursue?

Interviewee: Ah...what...

Greg: To talk to the counsellor about which of the options might be best for you. Is that why you are talking to the counsellor?

Interviewee: Yeah, yeah. I will.

Greg: Yeah. Okay then.

8 What do you understand by the term credit-transfer?

Interviewee: No.

Greg: No. This is when you can do a course in one institution and then receive recognition for another institution.

Interviewee: Oh, okay.

Greg: It's probably not relevant so much for you because you have done grade 12 here in Australia, but for some other international students where they start a course at TAFE and do a certificate or a diploma at TAFE, then change to uni. It's being relevant because they get a year worth of study recognised when they do an undergraduate program.

Interviewee: Oh, okay.

Greg: Yeah. Ah...with regard to careers and your career pathway, do you think it's being the benefit for you to have done year 12 here in Australia?

Interviewee: Yeah, I think so.

Greg: Do you think that means you understand more about the Australian education system than, say, someone who arrived from your country went straight in their first year at university?

Interviewee: Ah...yeah, I would say that because we are used to this kind...method of education, and then...I think it is worth taking year 12 at here,

Greg: So you have already...you have gone through a process of adjustment in grade 11 and 12?

Interviewee: Yeah, 11 and 12.

Greg: Did you come in 11 or did you come in 12?

Interviewee: 11

Greg: Yeah, okay. So you have already gone through two years of getting used to life in Australia before you started university.

Interviewee: Yeah.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Any other comment, Case 14, you would like to make about careers and your career intentions, and /or about the Australian education and training system?

Interviewee: Ah...I like the education system much better than my home country...and I found that I have improved a lot of ability here and then ... I think it is much better.

Greg: Okay then. With your two degrees, how long will that take you to complete?

Interviewee: Four years.

Greg: Four years. And then at the end of four years you are going back to China?

Interviewee: Um...I am not sure right now.

Greg: Not sure.

Interviewee: Not sure.

Greg: Okay then. Anyway, thanks very much for your willingness to participate in this interview.

Interviewee: That's all right.

Greg: I will turn the tape recorder off for the moment.

Interviewee: Case (15)

Greg: Case 15, can you give me your full name for the interview tape?

Interviewee: Um...

Greg: Okay.

Interviewee: Is my surname, and then ... and then

Greg: Okay. Case 15, um...I did send some questions to you earlier, I don't know if you got them or not.

Interviewee: Yeah, I looked at it but...um...I haven't opened my computer yet.

Greg: No, that's okay. That's fine. I will just ask you these nine questions altogether.

1 Did you receive careers advice at school (high school)?

Interviewee: Um...which high school?

Greg: Um...

Interviewee: High school here?

Greg: Um...were you in high school in Hong Kong?

Interviewee: Okay.

Greg: You are from Hong Kong, aren't you?

Interviewee: Yeah, but I took one year high school here.

Greg: Oh, okay then. Alright. Let's talk about Hong Kong first then here in Australia. Did you get any careers advice in high school in Hong Kong or not?

Interviewee: Yes.

Greg: And did that...was that about courses or ah...or institutions you can study in the future, or was it about particular professions or occupations?

Interviewee: I think it's about courses, and ...um...some information about your...um...which field can you go and is there a prospect something like that.

Greg: Okay. When did you transfer to Australia? What year level did you go to high school in Australia?

Interviewee: Um...a Foundation course, like year 12.

Greg: Oh, okay then. And when you were in Foundation course, did you also get any careers advice?

Interviewee: Mmmm...yes, but...um...it wasn't as...um...when I was in the Foundation course; the advice usually was around the course I can study in the university.

Greg: Yeah, so it's far more specifically related to courses as study in the university.

Interviewee: Yes.

2 If so, what was the level of advice, quality and did it help or benefit you?

Interviewee: Yes, it's quite helpful.

Greg: Oh, okay then.

3 What prompted you to undertake your current course?

Interviewee: Um...it is my interest.

Greg: Yeah.

Interviewee: Um...and I like to learn more about the environment...I think the majority is my interest.

Greg: Yeah, but was it something that you enjoy doing or you liked doing it as a subject?

Interviewee: Yeah.

Greg: Yeah, okay then.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Ah...you did this survey for me last year, at that stage, a year ago, you said you were...you thought intended career might be an environmental engineer.

Greg: Is it still your intention to be an environmental engineer, or have you changed your mind?

Interviewee: Um...if there is a job...um...within this field and there is another job in the other field for me to choose, I will choose environmental engineer as well. But if...um...because...um...I know the prospect in Hong Kong for environmental engineer is not very good so...I may have no choice but to choose another field to work on. But if there is a choice for me to choose environmental engineer I will...um...go for it.

Greg: Okay then. And your current course is a...um...is a Bachelor of Science involving environmental engineering or is it a Bachelor of Engineering?

Interviewee: Bachelor of Environmental Engineering.

Greg: Yeah, it's a Bachelor of Engineering. Right. Ah...

5 Does your degree studies relate to your intended career?

Interviewee: Mmmm...Before I didn't have any idea what this environmental engineer can do, but after studying this course I knew there are a few fields for us to choose to work on...um...probably for the consultation...um...we can work on a consultancy something like that. And because within this course we need to study...um...we need to study many different subjects from different faculties, so that makes to broaden our knowledge from different sides of point of view, maybe from science, or arts, or engineering point of field. So I think...um...it trains us to know a broader environmental field.

Greg: So your current course is very cross-disciplinary?

Interviewee: Yes.

Greg: Or multi-disciplinary?

Interviewee: Yes.

Greg: Yeah, um...does your current course have a practical component, an internship or going out into the field to do any work as an environmental engineer?

Interviewee: Um...for us, we need to complete...um...how many weeks...um...I think 12 weeks on internship.

Greg: Yeah.

Interviewee: But...um...our course doesn't provide any information for us how to choose...they don't provide some jobs for us choose but we need to find by ourselves in order to complete our course.

Greg: Did you do that placement in Australia or did you go back to Hong Kong to do that placement?

Interviewee: For me...um...I am still working on how to send a cover letter and resume for me...um...to help out here.

Greg: Okay.

Interviewee: But I had that...um...for the local...um...students here they...it is pretty hard for them to find a vacation work...for us...even harder, because most of them will restrict...ah...positions for local students.

Greg: Sure. Okay.

6 Is your degree recognised in your home country?

Interviewee: Yes.

Greg: Yeah. Okay then.

7 Have you received careers advice at your current University?

Interviewee: Yes, I went to MONSEAC in the campus...um... they gave me advice on how can I work on my resume and something like that...to apply for some environmental jobs and they gave me some list of companies for me I can contact to...

Greg: Was that for vacation employment or was that for current application for internship?

Interviewee: Um...I think...before...I didn't went ...off the internship, I just go for some environmental engineer prospect in Australia, so it is both.

Greg: Both. Okay then. Fine. Um...and was it mainly from that career office or did you get also support from you department or faculty?

Interviewee: Mmm...from the faculty, I talked to my faculty head...um...he gave me some general advice but it is not as detailed as the...um...MONSEAC ...um...the employment helper in school.

Greg: Yeah, okay then.

Interviewee: Yeah.

8 What do you understand by the term credit-transfer?

Interviewee: Yes.

Greg: Can you tell me what that means?

Interviewee: Um...if you want to...if you study in, for example if I am studying at Monash...um...I am studying in my second year, I want to transfer...ah...just change my school to...um...maybe other uni and if I want to transfer there...not all my credit point can be approved...but then...so...um... just see how many credit can transfer to their course. Is it something like that?

Greg: Yeah, that's fine.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Do you want to make any other comment about the Australian education and training system, or how you found your Foundation program, or how you found your undergraduate degree?

Interviewee: Um...I think for the...um...for the beginning I came to Australia to study the Foundation course because I study...um...Form 7 in Hong Kong, it's just like the level of year 13 in here...you got year 13 of high school but you don't have...

Greg: Yeah.

Interviewee: Um...so I find it very easy to study Foundation course and the course structure is quite...um...like Hong Kong it is not really what I expected...um...I expect...um...the Australian education would be more outgoing, and more variety of...I mean...the teaching style will be more active as in Hong Kong, but it is just like nearly the same...and just do...um...read the book and then go for exams something like that.

Greg: Yeah, so that's been a bit disappointing for you?

Interviewee: Um...initially yes, but because I just want to study for a degree so I need to accept.

Greg: Okay.

Interviewee: After going to the university I...I heard some...um...some education enrolment in America it seems they have smaller tutorial size so everyone of them is very comfortable to ask questions in front of the lecturer or tutor. But in here they find it...um...the tutorial size is quite large for them...so it is hard for us to raise questions during the lecture or tutorial.

Greg: Yeah.

Interviewee: And...um...they also said...um...what...in America is...the lecturer is more active and there are teachers in different methods between...something like that. In here some of lecturer are really good

but...um...some of them...um...are just for...just read what they have on the PowerPoint...so...yeah...own way of study.

Greg: Sure. Yeah. Okay then. Thanks for that. I will turn the tape off at this point,

Greg: So Case 15, with regard to at the end of your degree, do you think you will go back to Hong Kong, or do you think you will seek PR here in Australia?

Interviewee: Um...I think I will...I would like to seek PR here because environmental engineer prospect here in Australia is better than in Hong Kong...so...um...it is good for me to find a job related to my course.

Greg: Okay then. Thanks very much.

Interviewee: You are welcome.

Interviewee: Case (16)

Greg: Case 16, for the tape, can you give your full name?

Interviewee:

Greg: My first question because you remember you did this survey last year. It is a survey of international students.

Interviewee: What survey are you referring? Because I answered one from Monash International but I don't know...

Greg: Yeah, that's it.

Interviewee: That one?

Greg: Yeah, you answered electronically, it came from the Monash International office. It was for me, for my PhD study.

Interviewee: Okay. I thought it was for them.

Greg: Indirectly. I am going feedback the comments to them when I finish my PhD.

Interviewee: Yeah.

Greg: Okay. It is basically looking at how international students navigate their way through Australian education training system.

Interviewee: Oh, okay. That's fine.

1 Did you receive careers advice at school (high school)?

Interviewee: Yeah, I did.

Greg: Right. And was that about course selection or was that specifically about what occupation you might take up later?

Interviewee: Um...not specifically about courses. I mean they didn't suggest take this or that course, but when I come here they asked me what areas and duties I most enjoyed and liked...

Greg: Yeah, no, say, it was general careers advice about...

Interviewee: I know what you mean with course. I mean specifically in university or...

Greg: Some international students, like particularly Malaysian international students, were encouraged to think about going overseas or studied. Ah... can mean in that sense course or the comments that you are about to make which is about your general strengths and weaknesses and which direction you thought you might go in terms of careers.

Interviewee: Yeah, ah...this question...very long time ago... um...because...um...in my country something like the VCE. Not even at the end of high school but during high school we had to select something ...like this was before 1990.

Greg: Yeah.

Interviewee: So, um...I don't know, during that time, they talked about strengths and weaknesses. But they made questions and you answered. I mean, other issue, the questions sometimes are fairly obvious and probably your answers based on what already you think, because probably it was not that useful...anyhow...something like that.

Greg: But it did help you think about the direction you might head in in terms of university courses.

Interviewee: Well...it actually didn't change what I was thinking before.

Greg: It just confirmed what you have were already thinking?

Interviewee: Sort of.

Greg: Yeah.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: What prom...?

Greg: What prompted you to undertake that particular course?

Interviewee: I don't understand. What talk?

Greg: What prompted you to undertake PhD study?

Interviewee: Ah...

Greg: What factors led you to decide to do that here in Australia?

Interviewee: Ah... I mean I was trying to have an experience overseas, so...um...I wasn't planning to do anything in Australia...I was not aiming precisely to come here but...I the opportunity through a scholarship so that was one very important factor...um...because it provided was available for international students. Other issue, probably before that, I was seeking education in English and an English speaking environment...yeah, they are the most important factors, because before coming here I really didn't know much about Australia or its educational system.

Greg: Can you just say when you did come here? How long ago did you come here?

Interviewee: Um...2002.

Greg: Okay. Was the scholarship from Monash or was it from the Australian government?

Interviewee: Um...was from...ah...it was from one of the CRC programs, so it is probably a mixture private funding and I think some government funding.

Greg: Okay then.

Interviewee: I don't know exactly how it structures but I think it is for private...

Greg: Both.

Interviewee: Private and the state...Commonwealth.

Greg: Sure.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: I am not quite sure what you said 12 months ago in terms of careers.
Was it to be academic?

Interviewee: I don't know what question means and what I said 12 months ago, but ah...academic...I mean...what I would like to do now...in private sectors, but I say link with development activities, development agencies, ah...project development...that may include some relation with university but I am thinking of working 100 percent in university.

Greg: I found the answer now...was...you put entrepreneur.

Interviewee: Yeah, okay, yeah...I was using those sort terms but I still that idea but entrepreneur is more commercial focused.

Greg: Yeah.

Interviewee: But still something like that but switch to more related to human development.

Greg: Yeah, human development, development aid sort of issues.

Interviewee: Yeah, I mean...but...not in the sense , not just pure aid but, say, development from within the community, so that means some sort of

entrepreneurship...ah...for myself but also for people I am working with.

Greg: Sure.

5 Does your degree studies relate to your intended career?

Interviewee: Um...do you mean this particular PhD or...?

Greg: Yeah. The course that you just completed. How well does that line up with intended career?

Interviewee: Well, not much at the moment. Yeah, I mean...while I was doing the course I realised more about the nature of this industry...so I realised...not much on my side of work I would like to do. So the entrepreneurship and working on development is pretty much on different side from the topic I am studying...working on at the moment. I mean...working with people in the industry...is...industry of big companies...they do business in a worldwide scale...so those are not what I am interested in...I am more interested in small communities, and local activities, and regional activities.

Greg: Sure.

Interviewee: Um...but that was...I mean...in other senses the course was very valuable...ah since it introduced me to a more international, I say, environment ..., here both in Monash and in Australia...um...so more open to the rest of the world. And so from that point of view I think I gained a better understanding...better vision...

Greg: Sure.

Interviewee: a better vision of the worldwide reality.

6 Is your degree recognised in your home country?

Interviewee: Ah...I mean that depends on the universities...there is no central level decision that recognises it...ah...I would expect it to be recognised.

Greg: See, some countries have country to country agreements; some are more institution to institution agreements.

Interviewee: Well, I mean...none of those would apply to me. I don't think there is any country to country...many institutions are related to Australian universities...I mean institutions in my country.

Greg: Yeah.

Interviewee: Um...from the government point of view...I don't think there is much academic relation... I mean I coming from South America, if there is any willing of outside, from our institutions to create links with other countries would be either countries like the United States or Canada, or Spain, or have Spanish background...but actually...not actually really... Australia is not much known in South America.

Greg: Okay.

Interviewee: Um...I know in Columbia there is some sort organisations that try to promote Australian universities there, but...um...I am from Uruguay, Argentina. We don't know much about Australia.

Greg: You're from Argentina or Uruguay?

Interviewee: Both. I did my high school in Uruguay, but I did my university in Argentina.

Greg: Oh okay. I got your nationality down here as Argentinean, is that right or not?

Interviewee: Well...no...true nationality... is Uruguayan. I am willing to apply for residency in Argentina, because my wife is from there, and we are applying...the nationality would be better Uruguayan.

Greg: Okay then.

7 Have you received careers advice at your current University?

Interviewee: No...oh...well...not in the department or faculty, some months ago I went to...I think it's called community services. I talked with a counsellor...

Greg: Right.

Interviewee: Ah...regarding to the careers path I have...some problems here with... the here with the course and...I was bit confused. So I went there trying to seek some help...but...yeah...that's...um...but I mean I would like...additional help...I think I can receive from outside.

Greg: Right. Is your course a coursework-based or is it a research-based degree?

Interviewee: Researched based.100 percent.

Greg: Okay then. Thanks.

8 What do you understand by the term credit-transfer?

Interviewee: Um...I don't know much...it is very confusing...credit, from my understanding, is if you certain subjects you get certain amount of credit.

Greg: Yeah.

Interviewee: Because to get the degree you need this amount of credit...so if...I don't know what it means by transfer credit.

Greg: Within the Australian education and training system, someone who comes in TAFE can do a diploma and then get an advance-standing when they go over an undergraduate degree. So instead of doing the first year of the degree they given standing for that...so it means that sort of thing.

Interviewee: Ah...no, I didn't understand...a diploma...

Greg: No, no. A diploma at TAFE which is usually ...if you did a diploma at TAFE which is usually two years, then if you go to a university to do a 3 year undergraduate program, you usually given standing for the first year of your undergraduate program.

Interviewee: Okay.

Greg: As long as it is the same subject area.

Interviewee: Yeah, yeah, and yeah.

Greg: Yeah. Is that...

Interviewee: A friend of mine has been doing that...studying at TAFE and now she transfer to Monash.

Greg: Yeah.

9 Who told you about credit-transfer?

10 Any other comment on careers.

Greg: Any other comment on careers? Or have you found useful being in Australia to have done your degree in an English speaking environment?

Interviewee: Ah...Yeah, yes. I probably found it useful...ah...but pretty much...um...I am talking about careers advice...um...I mean, in my case, more help from side would have been very very useful.

Greg: Just as you started the course to have more an understanding of our education and training system?

Interviewee: Ah...I want to know about Australian education system but just about in which I enrolled.

Greg: Yeah, just your course.

Interviewee: Yeah.

Greg: Yeah. Okay. Thanks very much. Any other comment?

Interviewee: Oh no, no.

Greg: Okay. Thanks very much. I will turn the tape recorder off now.

Interviewee: Case (17)

Greg: Oh, Case 17 thanks for the batteries.

Interviewee: Oh, you are welcome.

Greg: And also just for the tape, can you give me your full name, please?

Interviewee:

Greg: Thank you. And Case 17, I got a set of 10 questions to ask you, the first one is...

1 Did you receive careers advice at school (high school)?

Interviewee: Um...it was very general...more than being on based on typical jobs, apprenticeship...um...we didn't...ah...um...have a lot of focus...ah but we did do careers based on going onto university but...um...I was really specific, I wanted to do marine science but I lived inland, so they didn't really discuss anything based on interest.

Greg: Yeah.

Interviewee: Um...so a lot of careers advice I got was geared towards me.

Greg: Yeah.

Interviewee: I kind of ignored it.

Greg: Okay.

Greg: Alright. And can you recall what year in high school, was it in your last year, or?

Interviewee: Um...they started...ah...in 10th grade...um...ah... high school I went to 11 and 12, so it was all three years.

Greg: Yeah.

Interviewee: Each year they will bring people in...um...they talk to us.

Greg: Can you recall...was there one careers teacher, or whether there was variety of teachers involved or counsellors?

Interviewee: Um...it was variety. They bring people from outside each community; they bring army reserves; they bring people from hospitals;...um...and also from technical schools; and they come and talk about what they do; and you can ask questions.

Greg: Okay. I should have asked...you are from USA...which bit?

Interviewee: I am from Pennsylvania.

Greg: Okay then. Alright. Thanks for that.

2 If so, what was the level of advice, quality and did it help or benefit you?

Greg: Um...how much of that information did you think was about helping you identify your weaknesses and strengths, or skills as opposed to giving you specific course information or introduction to occupations? Can you remember or not?

Interviewee: Um...

Greg: I won't ask you that question. Was it a well-structured program or did it seem skewed in a specific direction?

Interviewee: Um...I thought that might have been obscured...I didn't...I thought they pushed a lot of...um...ah...military service...

Greg: Is the criminal rate very high in your area in Pennsylvania?

Interviewee: Yeah, very.

Greg: Oh, okay.

Interviewee: It is very high.

Greg: But seems like a recruiting ground for armed forces, is it?

Interviewee: Yes...um...

Greg: Fort Bragg ...that is in North Carolina, isn't it?

Interviewee: Yeah...um...they did a lot with...um...occupational health going into any type of hospital kind of work, they really urge that kind of work or more technical side to being in the hospitals, administration, or being a technician for computers that type of things. I didn't feel there was much focus on, if you want to be a biology professor or if you are interested in higher education learning...

Greg: Yeah. Okay.

3 What prompted you to undertake your current course?

Interviewee: Um...ah...I decided probably at 12, ...I knew from a young age

Greg: Oh, okay.

Interviewee: But...um...I really enjoy Science and Science projects and...um...then being in the Arts and Humanity throughout high school, I still...ah... want to have a go at it, I think I can do it, but I am really interested in Marine Science despite not living near the water.

Greg: Okay. So you sort of enjoy it and you were good at Science.

Interviewee: Um...I think...um...I am very good at it...um...I might not be the best person, but I think I grasp the ideas.

Greg: Yeah.

Interviewee: And try to go forward with them.

Greg: Okay.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Um...now last year...this is nearly a year since you have filled out this for me, you said your career intention was being involved in marine products...ah...has your career intention changed in the last 12 months, or ...?

Interviewee: Yeah.

Greg: A better clear idea what you are going to do?

Interviewee: Yeah...um...it's exactly changed...um...I found it daunting with Chemistry, I'm enjoying it but...um...I realise more of the aspects as I go along with marine pharmaceutical business, it is a long process, you may never actually find ...

Greg: Yeah.

Interviewee: Anything that turns into a product on the market...

Greg: Yeah.

Interviewee: ...that sort of thing. And I realise...I really want to be out doing my own research but more developed in public...more...um...ah...animals more so than keeping them in the park and looking after them....

Greg: Preserving them? Ah...behaviour...

Interviewee: Behaviour...um...??extracting them medical processes...so

Greg: Okay.

Interviewee: Yeah.

Greg: Okay. Alright. Ah...

5 Does your degree studies relate to your intended career?

Interviewee: Um...I think it is pretty good. I got a really good background in Chemistry which I think could be useful depending on

what...which way I think the Behavioural Ecology. Um...a lot of the zoology questions I have taken...um...pretty big, they can tell a lot of behaviour aspects of introducing new course...and... (cut off)

Greg: Case 17, we were talking about...um...your degree and how well it related to your intended career. Any other comment on that?

Interviewee: Um...ah...I find myself more interested in urban development and education...um...just because I work really well with small children as a nanny, I really enjoy it and I want to find a way...eventually to take my love for science and strategically...find a way to bring it to small children, but not be an elementary school teacher.

Greg: Yeah. Okay then. Alright.

6 Is your degree recognised in your home country?

N/A

7 Have you received careers advice at your current University?

Interviewee: Um...I have never actually gone out actively asking questions...um...because I don't...I don't think I would be staying in this country, so the employment would be a little bit different for me...

Greg: Yeah.

Interviewee: Um...but I got general information in classes they told us about what kind of jobs are out there...

Greg: Yeah.

Interviewee: Um...but, yeah, never actually asked...

Greg: Right. Okay. Alright. Ah...

8 What do you understand by the term credit-transfer?

Interviewee: Um...

Greg: Have you ever heard that term?

Interviewee: Yeah...yeah...um...when I first came over I did one year in the US at the university...um...and I would credit-transfer my first year over and then so it wouldn't be very difficult because the course is different and it is liberal arts in the US ...there is no specialisation in the first year. You have to do your English as well as your science and they might not transfer my credit and grade but give me 25 percent credit for first semester of the first year, so I did have to do a lot but I least unspecified so...um...I wanted after at that point, ...do whatever first year subject I do which is only three. That's all I have to do...

Greg: Yeah.

Interviewee: As well as Chemistry and Botany, so...but I don't know how it works...the system here in terms of our credit-transfer, I never actually looked at it.

Greg: Oh, that's okay then. Um... and you probably have had a background anyway in the US being taught to and finding out about credit in the courses, is that right or not? It seems to be conversation American students have about course credits as oppose to credit-transfer?

Interviewee: Um... um...while our subjects are getting ready...um...credits for each...ah...three credits for maybe...um...a four year subject or four credits...um...and if you want to transfer to something else you have to do certain number of credits or in order to finish your degree you have to have 150 credits total...

Greg: Yeah.

Interviewee: Um...and...part of it specified you have to have at least 75 percent in your major, but they kind of outing certain number of credits...and...grades

Greg: Yeah.

Interviewee: And the credit system...um...separate.

Greg: Yeah. That's right.

Interviewee: It's all very confusing.

Greg: The reason why these two questions are here is...it's really...ah...it indicator to find out how people would be able to navigate through our education and training system, so it is more applicable for someone who was grade 12 coming here and/or at TAFE in particular, like the person who just rang me, he did two years at TAFE and get one year credit here.

Interviewee: Oh, okay.

Greg: Okay.

Interviewee: Yeah, yeah.

Greg: So it sort of what the situation you just described.

Interviewee: Yeah, yeah...um...in high school we, in year 11 and 12, you are given the opportunity to if you are at that level to take English courses, science courses, and a couple of others, they are called advance placement courses.

Greg: Yeah.

Interviewee: Um...and they are taught with the other subjects, but they kind of go at a faster pace.

Greg: Yeah.

Interviewee: So at the end of the year, you take a cumulative exam and it scores from one to five.

Greg: Yeah.

Interviewee: And if you get 4 or above you don't have to take that subject in your first year at university.

Greg: Yeah, so it's sort of like an advance-standing.

Interviewee: Yes.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Now are there any other comment you would like to make about...um...coming from your school system in the US...um...Pennsylvania coming to Australia...is there anything that you had to adjust to or get used to, or any comment you like to make?

Interviewee: Teaching style is very different...um...

Greg: Why?

Interviewee: Um...I thought it typical at first time was your accent...and then that faded away...um...I find it hard because I am not tested frequently so it is more of my responsibility to do my basic study everyday...

Greg: Yeah.

Interviewee: Um...and at the end of semester you are tested everything that I have learned, rather than being tested every two weeks.

Greg: Yeah.

Interviewee: And then there are no exams you are just tested on what you have learnt

Greg: Yeah.

Interviewee: Um...I thought it was harder, it was more dependant on essays...here...I did that back home but not this in degree...

Greg: Yeah. Okay. Have you found in the course you selected and the subject you selected the main vehicle for assessment being essays, or have you also been given assignments or projects work or something like that?

Interviewee: Um...I was given as much as I was in first year but I think that topic ...you get more as you go along...um...but...a lot of the...what they want in their answers they want in the essay form, even though you might probably do short answer but I think given at home multiple choice, and I find that daunting as well, it is kind of nice to have...kind of even...

Greg: Yeah.

Interviewee: A little bit of both...so you are better at one thing that you know...

Greg: Yeah.

Interviewee: But you know that you are also better at something else.

Greg: Yeah. Okay. Thanks very much, Case 17.

Interviewee: You are welcome.

Interviewee: Case (18)

Greg: Okay, Case 18, again, for the tape, can you say your full name for me?

Interviewee: Ah...my name is

Greg: Okay. Thanks Case 18. And thank you for doing this again.

Interviewee: No worries.

Greg: Okay. The first question was...

1 Did you receive careers advice at school (high school)?

Interviewee: Ah...no...not really.

Greg: Not really.

Interviewee: Not really...Just finish high school and...ah...we choose our own path from there, that's about it. Yeah.

Greg: Okay then. And...ah...you were...ah...that was high school in Malaysia?

Interviewee: Ah...excuse me, I can't hear it, because the reception is kind of bad.

Greg: It...it...

Interviewee: Excuse me.

Greg: It was high school in Malaysia that you were at?

Interviewee: Yeah, yeah, I was in Malaysia. Yeah.

Greg: Yeah. And was it government or non-government school?

Interviewee: It was a government school.

Greg: Okay then.

Interviewee: Yeah.

Greg: And did they talk to you about going overseas to do courses or anything like that?

Interviewee: Ah...not really, nothing, nothing about it.

Greg: Okay then.

Interviewee: Yeah.

Greg: Ah...now your current course...

Interviewee: Yeah.

Greg: ...is it a Bachelor of Engineering.

Interviewee: Yeah.

Greg: Civil Engineering.

Interviewee: Yeah.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Um...probably because...um...ah...just...a friend that did the course before...after he finished the high school, and probably the fact that my parents encouraged me to take it as well.

Greg: Okay then.

Interviewee: So...ah...um...I have done a bit of research myself as well before I chose the course, that's about it.

Greg: Yeah. Okay then.

Interviewee: Yeah.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Ah...now we did the survey, which was about 12 months ago...

Interviewee: Yeah.

Greg: You indicated at that stage you were going to...ah...become a civil engineer.

Interviewee: Yeah.

Greg: Ah...are you still intending to do that?

Interviewee: Oh, yeah.

Greg: Okay. And you haven't changed your mind in that time?

Interviewee: No, I haven't changed my mind. Yeah.

5 Does your degree studies relate to your intended career?

Interviewee: Um...current course...um...well as I said...it's...um...last time, I think it is because that I...um...here it emphasises more in theoretical part, rather than in practical.

Greg: Yeah.

Interviewee: Guess...ah...I did my diploma in civil engineering back in Malaysia; I received my practical training...

Greg: Yeah.

Interviewee: So...um...when I came here it was a bit hard to cope with new...um...method that they are applying in their studies.

Greg: Okay.

Interviewee: Yeah, so I think it is a little bit harder for me but I guess, if you...if you...if you took from the first year of the course, then it would be easier to finish your course I think.

Greg: Now you were involved in doing a twinning program when you started as part of your program in Malaysia and then you came to Australia?

Interviewee: Yeah, I started in Malaysia because I was doing my diploma and I came here I got...I received one and a half year of exemption.

Greg: Right.

Interviewee: Yeah, it did put me in the middle of the course.

Greg: And that...what was the name of the institute that you were doing course with in Malaysia?

Interviewee: It's in the Federal Institute of Technology.

Greg: And was there a direct tie between them and Monash, or...

Interviewee: No, no.

Greg: Sorry, you were at Utas, aren't you?

Interviewee: Yeah, there is no...there is no direct connection; they have direct connections to several universities in England.

Greg: Not Utas.

Interviewee: No, not in Australia. Yeah.

Greg: Yeah, okay.

Interviewee: Yeah.

Greg: And so you ended up getting a diploma and then you went to Utas.

Interviewee: Yeah.

Greg: Say, I got a Diploma in Civil Engineering, what credit would I get?

Interviewee: Um...they would accept your syllabus and I got that one and a half year...um...credit.

Greg: Yeah.

Interviewee: So when I first came here I was doing...um...from the...um...second semester in second year.

Greg: Yeah.

Interviewee: Yeah.

Greg: How long was the original diploma in Malaysia? Was that two years?

Interviewee: Um...first when...my first certificate in high school, it took me three years...

Greg: Right.

Interviewee: ...to finish it.

Greg: Right.

Interviewee: The duration time is two years to finish diploma, but it depends because nowadays they lower the duration time. It's now probably a couple of years, that's about it.

Greg: Case 18, could you have gone from that course in Malaysia straight into the workforce, or would you have needed another professional qualification?

Interviewee: Um...if I were to look for a job in Malaysia, I get...I go straight to work after I finish my diploma. But...um...the pay wouldn't be that good and you would be still travelling, so you would still need another qualification after that.

Greg: So is it...what specific factors prompted you to continue on and to come to Utas to do a degree?

Interviewee: Because from Utas, it is an international degree, it's like...um...um...I think back in Malaysia, they demand for overseas graduates is more than the local graduates.

Greg: Yeah.

Interviewee: So you have a better chance to get a job, you know by doing Australia or Malaysia that...that's a good factor. Yeah.

Greg: Okay then.

Interviewee: Yeah.

6 Is your degree recognised in your home country?

Interviewee: Yeah, it is recognised. Yes.

Greg: Okay then.

Interviewee: Yeah.

7 Have you received careers advice at your current University?

Interviewee: Well, I think once or two times a year about careers or whatever it is.

Greg: Yeah.

Interviewee: But...um...I never really attend something like that.

Greg: Yeah.

Interviewee: Yeah, I hope that...that...that there were courses, or seminars, or talks about it going on here. Yeah.

Greg: Okay then.

Interviewee: Yeah.

8 What do you understand by the term credit-transfer?

N/A

Covered by previous answer.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Do you want to say anything else about education and training system here in Australia, or Utas?

Interviewee: Well, I guess it is really...um...different from...um...Asian standards I guess.

Greg: Yeah.

Interviewee: And it's more comprehensive, because they really like...um...cover a lot of...um...if I take engineering, they not only emphasises on the engineering subjects they also emphasises on other subjects.

Greg: Yeah.

Interviewee: I mean your...your...your skills, your theoretical understanding of it, so it's...um...various issues to cover, you know, from subjects we learn back in...um...Malaysia or any Asian countries, that's what I think.

Greg: Okay then.

Interviewee: Yeah.

Greg: All right, thanks very much again for doing this

Interviewee: No worries.

Greg: Okay then.

Interviewee: Bye. Thank you.

Greg: Bye bye.

Interviewee: Bye.

Interviewee: Case (19)

Greg: Case 19, for the tape, can I get you to say your full name?

Interviewee: Ah....

Greg: Okay then. And you are from Mauritius?

Interviewee: Yes.

Greg: Okay. And your current degree, is it Bachelor of Engineering?

Interviewee: Yes, it is Bachelor of Engineering.

Greg: Okay then. Alright. I will start asking the questions...ah...you completed a survey for me about a year ago, and so what I am doing is I am going through some of the students...and...arranging interviews with them to get a bit more information, so question number one is...

1 Did you receive careers advice at school (high school)?

Interviewee: Ah...yeah, I did...a little bit...but not much you know what I mean...so...like careers... some information on what I can do like that...

Greg: Okay. So it was sort of course information...

Interviewee: Yeah.

Greg: Was it...ah...information given to you about, say, going on the university?

Interviewee: Ah...not really, not about uni, just...ah...like jobs...what do I need to...ah...job...what I need to do for engineering to for example.

Greg: Okay then. And when was that...can you remember what year in high school that you would have gotten this information?

Interviewee: No, not really. ???

2 If so, what was the level of advice, quality and did it help or benefit you?

Interviewee: Ah...yeah, a little bit...

Greg: A little bit. Okay then.

3 What prompted you to undertake your current course?

Interviewee: Ah...what factors...ah...

Greg: Yeah.

Interviewee: I would say that is it's very good and...ah...it is easy to get a job in engineering, that's why...

Greg: Right. Okay then.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: And I notice from your survey last year you indicated that you wanted to be an electrical engineer?

Interviewee: Yeah.

Greg: Are you still wanting to be an electrical engineer?

Interviewee: Yeah.

Greg: Yeah? You haven't...

Interviewee: I am doing a degree...I am doing electrical engineering.

Greg: Right. Okay. So you haven't wanted to change your...ah...mind about what career you want to do when you finish?

Interviewee: Ah...no.

Greg: No. Okay then. Okay...ah...

5 Does your degree studies relate to your intended career?

Interviewee: Yes, definitely.

Greg: Yeah. Okay. Now how...can you just tell me a little bit about your current course...um...with electrical...with...the course you are doing in electrical engineering, is it fairly practical, is it going to help you when you go into the workplace, or is it fairly theoretical?

Interviewee: Ah...no it's more theoretical, but I would say afterwards it's going to be more practical...I don't know...I am waiting...I will just have to wait and see.

Greg: Case 19, is it a four year course, or three year course?

Interviewee: Yeah, it is a four year course.

Greg: And...and do you know, if in the fourth year, it will include some sort of practical components where you go into the workplace?

Interviewee: Yes...ah...I got design to do next year, so I think that's...its more practical, so I think it might help.

Greg: Okay then.

6 Is your degree recognised in your home country?

Interviewee: Yes, it is.

Greg: Okay then.

Interviewee: Cause in Mauritius, the advice is about it as well.

Greg: So you...

Interviewee: I asked for it, so...

Greg: You asked for advice about it.

Interviewee: Yeah.

Greg: Okay then. Whilst you have been...you are still at Monash, aren't you?

Interviewee: Yeah.

Greg: Which campus at Monash?

Interviewee: Ah...Clayton.

Greg: Right. Whilst you at Monash...

7 Have you received careers advice at your current University?

Interviewee: Um...I might have, but I don't remember.

Greg: You might have...

Interviewee: I don't know...I don't remember.

Greg: You can't remember...you can't remember if anyone has come in from...from the engineering fields and given...

Interviewee: Oh...yeah...yeah...there have been...from IEE

Greg: Yeah.

Interviewee: From Institute of Electrical Engineering.

Greg: Right.

Interviewee: Yeah, IEE

Greg: So they have come in and talk about the engineering profession?

Interviewee: Yeah.

Greg: Yeah. Okay then.

8 What do you understand by the term credit-transfer?

Interviewee: Ah...is it like some kind transfer of academic research? ...

Greg: Oh, okay. It's usually more applicable for someone who does either a course overseas and then transfer to Australia, or TAFE transfer to uni and they get recognition for the studies they have already done.

Interviewee: Ah...

Greg: Yeah, that's what it means. Yeah.

9 Who told you about credit-transfer?

10 Any other comment on careers.

Greg: Would you like to tell something else about the course you have done...ah...

Interviewee: Sorry

Greg: Are you enjoying your course?

Interviewee: Yeah.

Greg: And is there anything that you would like to tell me about your course?

Interviewee: Ah...what do you mean, like what kind of...?

Greg: Ah...this is a general comment. Have you had trouble...um...in adjusting between...ah...being at school in Mauritius and come in and do engineering in Australia?

Interviewee: No, fairly similar...

Greg: Okay. Fairly similar.

Interviewee: Yeah. Fairly similar.

Greg: Okay then. Ah...thanks very much. I will just turn the tape off and just talk to you for a moment.

Interviewee: Case (20)

Greg: Case 20, for the interview, can you give me your full name?

Interviewee:

Greg: Thank you. I have got 10 questions to ask you the first one is...

1 Did you receive careers advice at school (high school)?

Interviewee: Back in Malaysia...

Greg: Yeah.

Interviewee: And...

Greg: Are you there?

Interviewee: Yeah.

Greg: Were there being information about going on to university or to college something like that?

Interviewee: Um...probably one or two sessions.

Greg: Yeah.

Interviewee: But...um...I didn't...little information about going overseas.

Greg: Okay then. Can you remember what year level you would have gotten this advice?

Interviewee: Um...it would have been Form IV or Form V .The last years of high school.

Greg: Is that the same as year 11 and 12 here in Australia?

Interviewee: Um...probably like...9 and 10.

Greg: 9 and 10.

Interviewee: At the end of year 10...

Greg: Okay then.

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Greg: Now I know that you have finished your Master course, but can you recall what factors led you undertaking your Master course?

Interviewee: Um...I took bachelors...

Greg: Was your Bachelor of Engineering in Malaysia or in Australia?

Interviewee: That's in Australia.

Greg: Okay. So in fact you did Bachelor of Engineering and then you're Master of Business Systems both in Australia?

Interviewee: Yeah, both in Monash.

Greg: Both in Monash. Okay then.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Now you did your survey for me nearly a year ago, at that stage, you indicated that your possible career might be, I am just check, ah...an engineer.

Interviewee: Yeah.

Greg: Is that what you are doing this year?

Interviewee: Um...I haven't gotten a job yet, but when I go back to Malaysia I will apply for it.

Greg: So you will be going back to Malaysia?

Interviewee: Um...I will be looking at working in Singapore for a couple of years.

Greg: Okay, but you hope to go back to Singapore and get a job as an engineer.

Interviewee: Yeah.

Greg: Okay. So nothing has changed with regard to your career intention.

Interviewee: No.

Greg: No. Okay then.

5 Does your degree studies relate to your intended career?

Interviewee: Um...Bachelors yes. Actually with the Masters not directly, not really

Greg: Um...would it help you in the business environment associated with being an engineer?

Interviewee: Um...yes, so far my understanding...um...um...like...logistics solutions, financial modelling, artificial intelligent, I find that quite useful although one and a half year doing a Masters...variety ,things we can ask

Greg: Okay then.

6 Is your degree recognised in your home country?

Interviewee: Um...Bachelors I believe so. For Masters I haven't checked that yet...

Greg: Okay then.

7 Have you received careers advice at your current University?

Interviewee: Um...yes. Bachelor, yes, especially in final year there were talks, workshops, they invited prospective employers.

Greg: As part of the bachelor program, did you have to do an internship where you went out into industry to do a project?

Interviewee: Yes. For me a bit different .I came here and started at Monash in third year of Bachelor of Engineering, because I already have a diploma back in Singapore.

Greg: Yeah.

Interviewee: And I used my previous work experience in place of education. I just had to write a report but if I were a normal student here I would have to do 4 years.

Greg: Just because I am curious more than anything else, are you also a permanent residence of Singapore?

Interviewee: Um...yes, I am.

Greg: So you...but you have Malaysian nationality?

Interviewee: Yes.

Greg: But Singapore permanent residence?

Interviewee: Yeah.

Greg: Okay. Thanks for that. That advice you got from Monash with regard to careers, was it useful or, do you want to comment on that?

Interviewee: Um...Well it didn't for some time attend the careers service. I can't remember much of it. Quite useful ... alternatives to explore

Greg: In transferring from your course, was the course in Malaysia or in Singapore?

Interviewee: Um...I got my Diploma in Singapore.

Greg: Okay. Um...ah...was it useful or not so useful? But did that link in well with your bachelor program or did you find that you had to undergo a period of adjustment?

Interviewee: Yeah, I had to undergo at least one semester... it was pretty hard, because back in what I have learned is more technique...I think...the Diploma I got...

Greg: Yeah.

Interviewee: You can imagine that a lot of work, and hands on...not much about the science of engineering

Greg: Yeah.

Interviewee: So I find that there ought to be a link between these two worlds ...one is more practical-based, one is much more theory-based.

Greg: Yeah. It is the same sort of thing that happens with students transferring here in Australia between TAFE and university...that often it takes a semester of adjustment.

Interviewee: Yeah.

Greg: Um...so...in effect that transfer from Singapore, was it...did you get credit-transfer?

Interviewee: Yes, I did.

Greg: Okay then. So you understand the term what credit-transfer is?

Interviewee: Yes.

Greg: Okay. And they gave your full two years?

Interviewee: Yes, they gave me my full two years.

Greg: Okay then.

8 What do you understand by the term credit-transfer?

See response under previous question.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: And at the time or soon after you did the survey for me, you sent me ...you and I have exchanged several emails...um...given that it is now a year later since you did that survey, are there any comment you want to make about education and training in Australia, or the nature of your course and you going into being an engineer?

Interviewee: Not really. ???

Greg: Okay then. Case 20, I am going to turn the tape off now, won't be a moment.

Interviewee: Case (21)

Greg: Case 21, for the tape, can you give me your full name?

Interviewee: Um....

Greg: Okay. Thank you. The first question is when you were in high school...I think you are from Taiwan, aren't you?

Interviewee: Yes, yes.

1 Did you receive careers advice at school (high school)?

Interviewee: Um...no.

Greg: No?

Interviewee: Yeah.

Greg: Um...okay. When you came to Australia the course you did was a diploma at TAFE in Tasmania?

Interviewee: Yeah, in Tasmania.

Greg: Okay. What was the name of diploma?

Interviewee: Um...from...um...Tasmania...TAFE Tasmania.

Greg: Yeah. But was it a Diploma of IT or what was the name of the diploma?

Interviewee: Oh, you mean the faculty, is it?

Greg: Yeah, the actual qualification.

Interviewee: Okay...um...Information...

Greg: Oh, okay.

Interviewee: Information Technology.

Greg: Right. Diploma of Information Technology...

2 If so, what was the level of advice, quality and did it help or benefit you?

N/A

3 What prompted you to undertake your current course?

Interviewee: Network engineer. Network engineer.

Greg: Okay. But why did you decide to do that course?

Interviewee: Um...because...because that just...that course I am interested in, because another also about programming...and it is...I have to go to Launceston...

Greg: Oh, okay.

Interviewee: It is too far, yeah. I chose network engineer.

Greg: Oh, okay. So...

Interviewee: I can go into...

Greg: So was that because you were interested in the course?

Interviewee: Yes.

Greg: Had...had you done a similar course in Taiwan or not?

Interviewee: No.

Greg: No. So that was new for you.

Interviewee: Yeah.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Okay. Ah...um...now last year when you did the survey for me...

Interviewee: Yeah.

Greg: Ah...you didn't say what career you were interested in going in...

Interviewee: Yes.

Greg: Um...do you know now when you finish your...what is your current course at QUT?

Interviewee: Um...IT.

Greg: IT. So when you finish that course, what sort of career do you think you will have, or what sort of job do you think you will have?

Interviewee: I am really not sure now, because after I finish...finish my degree...

Greg: Yeah.

Interviewee: And I will study another degree or find a job.

Greg: Okay, but it obviously would be something related to IT?

Interviewee: Yeah.

Greg: So your current degree, what's that called? Is it a bachelor of information systems?

Interviewee: Bachelor of Software Programming.

Greg: Bachelor of Software Programming. Okay then. Ah...

5 Does your degree studies relate to your intended career?

N/A

6 Is your degree recognised in your home country?

Interviewee: Um...recognised...you mean?

Greg: When...when you get your degree, if you were to go home to Taiwan, and...and you want to do further study, will the degree be recognised?

Interviewee: Um...I think so...I think.

Greg: Sorry, I didn't hear that.

Interviewee: It will be recognised, I think.

Greg: Yeah, okay. So you think it will be recognised. Okay.

7 Have you received careers advice at your current University?

Interviewee: ...

Greg: Ah...when you were at TAFE in Tasmania, did you talk to the international student advisors about your course, or about your jobs something like that?

Interviewee: Um...I decide by myself.

Greg: You decide by yourself. Okay.

8 What do you understand by the term credit-transfer?

Interviewee: They gave me about...credit for a year

Greg: So how much credit?

Interviewee: ...96...96 credit.

Greg: What do you mean by 96 credit?

Interviewee: Um...that means I don't have to study 8 subjects.

Greg: So your course in Tasmania was a two year diploma?

Interviewee: Yeah.

Greg: So...

Interviewee: One year diploma...and...and...one year and a half year for certificate.

Greg: Oh, okay. So one and a half year certificate and followed by one year diploma. So what does that mean in terms of time that saves of your degree? Did they give you one year of your degree?

Interviewee: Yeah, one year.

Greg: Yeah, okay then. So you know all about credit-transfer then?

Interviewee: Yeah, I know.

Greg: Okay. Um...Case 21, how have you found the difference between going to school in Taiwan and the way...ah...the course was conducted at TAFE in Tasmania, or the course at QUT. Has that been a problem for you?

Interviewee: ...No

Greg: No...ah...in terms of just getting used to the course...was it...is it quite different the way the course is conducted in Tasmania, compared to back to in Taiwan?

Interviewee: I mean...I think the diploma is practical but...in Taiwan is more exams...theoretical.

Greg: Yeah, so the diploma was more practical...

Interviewee: Yeah.

Greg: And in Taiwan it is more theoretical. What about the course now you are doing at QUT?

Interviewee: I think it is harder.

Greg: Harder.

Interviewee: Yeah, harder.

Greg: Okay. And...but is it theoretical or a bit more like what you were used to in Taiwan?

Interviewee: Like Taiwan I think...a bit more like...

Greg: Yeah. So this year, do you regard this year as your second year of your degree?

Interviewee: Um...

Greg: Because of credit-transfer?

Interviewee: Yes.

Greg: Yeah.

Interviewee: Um...no, I am doing some first year subjects.

Greg: Yeah, but it's...

Interviewee: Next semester I will start major.

Greg: Yeah, okay. So the next semester is the major. So you will finish your degree at the end of next year?

Interviewee: Um...

Greg: Or the end of the next semester?

Interviewee: Yes, next semester.

Greg: Yeah, okay. And after that, do you think you will go back to Taiwan, or do you think you will continue on to Masters?

Interviewee: I have to study two more years.

Greg: Oh, two more years.

Interviewee: Yeah, two more...

Greg: Okay then. And then you plan to go back to Taiwan, or will you end up asking...

Interviewee: Not sure...not sure about that.

Greg: Not sure.

Interviewee: Depends on the...

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Greg: Okay then. Do you want to make any comment about education in Australia?

Interviewee: Um...Taiwan...our government provides one...one year introduction or actually...ah...universities

Greg: Yeah.

Interviewee: And some high schools and colleges. I enjoy that introduction about know Tasmania...

Greg: Oh, okay then.

Interviewee: And then...then when I studied in diploma I went on the internet and a friend told me Tasmania is quite nice, so I choose... here

Greg: Okay then.

Interviewee: ...choose all by myself.

Greg: Yeah.

Interviewee: Yeah.

Greg: Okay then. I am just turning the tape off now, Case 21.

Interviewee: Case (22)

Greg: Case 22, for the tape, can you tell me your full name.

Interviewee:

Greg: Okay then. Thank you. And you are from Malaysia?

Interviewee: Yes, from Malaysia.

Greg: Okay. And you are studying at Curtin University?

Interviewee: Yes.

Greg: Okay then. The first question...

1 Did you receive careers advice at school (high school)?

Interviewee: I received some career advice from the school's counsellor as well as the teachers in the school giving some broad ideas about choosing the right course of interest when I was in Form 5 (which is equivalent to Year 12 in Australian education system).

This advice focussed on information about universities and was given in grade 10.

Comments in italics were added in after the interview at the time of the transcript being verified by Case 22.

Greg: Okay. Were you in private or government school?

Interviewee: Um...government school

Greg: Okay then. And that advice was it in your last year at school or was it through several years of high school?

Interviewee: Actually the advice was given several years before I graduated in high school but during the final year in high school the administrator of the school decided to focus and emphasize more on career selection.

Greg: Okay then. And was there also advice about going overseas for education?

Interviewee: Um...no.

Greg: No. Okay.

2 If so, what was the level of advice, quality and did it help or benefit you?

Greg: Do you think that advice helped you determine...ah...which university course to take?

Interviewee: Um...yes, of course.

Greg: Okay then.

3 What prompted you to undertake your current course?

Greg: Ah...it's a Bachelor of Engineering?

Interviewee: Ah...that because all my brothers taking Engineering courses so I have interest to take Engineering degree.

Greg: Okay. So you are following your brothers' footsteps with doing Engineering.

Interviewee: Yeah.

Greg: Okay then. Um...and also you have an attitude for engineering? You like doing those sort of subjects?

Interviewee: Yes, every Engineering subject. Yes. Also, Math is my favourite subject and I know Engineering subjects involve a lot of Math.

Greg: Okay then.

4 What is your career intention? Has it changed in the last twelve months (since you completed the questionnaire)?

Greg: Um...last year for career, you put down chemical engineer.

Interviewee: Yes.

Greg: 12 months later, you still thinking you would be a chemical engineer?

Interviewee: Yes, of course. I am still interested in being in working with PETRONAS (Petroleum Nasional Berhad) company which is my sponsor.

Greg: Okay. Is it a family company?

Interviewee: No, it's an oil company ...

Greg: Are you on a scholarship with them, or?

Interviewee: Yes.

Greg: Oh, okay. So they are funding you to study in Australia?

Interviewee: Yes.

Greg: Okay then. Thank you. Your current degree...ah...is it just a bachelor of engineering, or is it more specific than that?

Interviewee: Um...Bachelor of Engineering (Chemical Engineering).

Greg: Okay. So it's Bachelor of Engineering and Chemical Engineering. And that course, how far into the course are you?

Interviewee: Um...second semester, second year.

Greg: Second semester, second year. Have you...do you know if the course has any practical component?

Interviewee: Um...yes, ...

Greg: So you have an internship or something like that maybe in the fourth year?

Interviewee: Um...yeah, third year.

Greg: Okay.

5 Does your degree studies relate to your intended career?

N/A

6 Is your degree recognised in your home country?

Interviewee: Um...yes

7 Have you received careers advice at your current University?

Interviewee: Um...yes, from the school of engineering, ...

Greg: Okay. And has the ...Institute of Engineering been in to talk to you or not?

Interviewee: Ah...yes, they came our uni and talked about engineering.

Yes the Institute of Chemical Engineering (IChemE) did come to Curtin a few times and talked about the development of the industry as well as current job opportunities for chemical engineering graduates. Also, the Department of Chemical Engineering asks their students to be a member of IChemE as well as Institute of Engineers, Australia (IEAust) to receive valuable information in chemical engineering areas every week.

Greg: Okay then.

8 What do you understand by the term credit-transfer?

Interviewee: Credit-transfer, I heard about it but I am not sure what it is all about.

Greg: Okay then. Alright. And can you tell me have you enjoyed your experience in studying at Curtin.

Interviewee: Ah...yes.

Yes, I really enjoyed my experience in studying at Curtin mainly because of cultural diversity that has been promoted in this university

as well as the staff, especially the lecturers who have been really helpful and supportive as well.

Greg: Yeah.

9 Who told you about credit-transfer?

N/A

10 Any other comment on careers.

Interviewee: *I found that the education and training system in Australia is really fun mainly because of the opportunities I have had to meet lots of international students from all over the world as well as Australian students and people are really friendly and approachable. In addition, I found that the education system is well organised in terms of accessing lecture notes, the teaching styles and the facilities provided for the students. Although the contents of the course can be very hard to understand sometimes, but the lecturers are ready to consult with their students.*

Greg: Would you like to make any other comment about the education and training system in Australia, or how you found Curtin?

Interviewee: Um...the most interesting about Curtin...um...I have met other international students.

Greg: In your program, are there lots of international students?

Interviewee: Yeah, yeah, lots, lots international students.

Greg: Okay then. What...mainly from Malaysia, or from lots of different countries?

Interviewee: From different countries, the biggest is from China.

Greg: Okay. So you think that helped you?

Interviewee: Yes.

Greg: Okay. And when you go back at the end of your fourth year, will you go back to your company to work?

Interviewee: Hopefully. Yeah.

Greg: Hopefully. Do you have...do you have to work for them for a certain period of time?

Interviewee: Um...yes, for 10 years.

Greg: Oh, 10 years. That's a long time, Case 22.

Interviewee: Yes.

Greg: Okay then. Thanks. I will just turn the tape record off now. Thank you.

Appendix 11 - Institutional Contacts with regard to Findings

Institution	Contact	Position
Curtin University of Technology	Steve Algie	Dean, Engineering and Computing
	Michelle Bowman	A/ International Student Advisor
	Bill Bradshaw	Marketing Manager-Engineering, Science and Computing
	Ebony Frost	Careers Consultant
	Helen Hesselberg	Client Services Officer
	Tracey Hodgkins	Director, Curtin Advantage
	Liz King	Manager, Student Services – Engineering, Science and Computing
	Kevin McKenna	Dean, International
	Tanya Vernon	President, Curtin University Postgraduate Student Association
	Jo Ward	Dean, Science
	Mario Zadnick	Dean, Teaching & Learning- Engineering, Science & Computing
Monash University	Danielle Hartridge	Manager, Student Services-Monash International
	Siew-Kim Lim	International Careers Counsellor, Monash University Careers and Employment, Caulfield
	Irene Png	Co-ordinator, Student Support- Monash International
South Australian Government Schools		
International Education Services	Jan Wallace	Executive Manager, Student Services
Adelaide High School	Anita Zocchi	Deputy Principal
Banksia Park High School	Claudia Tyrell	International Student Program Coordinator
Charles Campbell Secondary School	Heather Makris	ESL/LOTE and International Co-ordinator
Glenunga International High School	Dianne Przytula	ISP Finance & Client Services Manager

TAFE Tasmania	Linda Clough	International Administration Co-ordinator
	Sue Guiver	International Student Advisor
University of Canberra	Janet Mountseer	Manager, International Marketing and Recruitment
University of Tasmania	Nigel Ewan	Deputy Academic Registrar
	Prof. Jim Reid	Dean -Science, Engineering & Technology (Faculty of)
	Paul Rigby	Director, International Services
	Peter Tatham	Head, Careers & Employment Services
	Jean Weeding	Student Liaison Officer, School of Engineering

APPENDIX 12 INTERVIEW SCHEDULE

Student	Date	Tape	Method	Date Checked Transcript Received back from student
Case 1	11/09/04	1 A	Person	25/11/04
Case 2	11/09/04 ?	1 A	Person	23/11/04
Case 3	12/09/04 ?	1 A	Person	18/12/04
Case 4	14/09/04	1 A	Person	23/11/04
Case 5	14/09/04	2 A	Person	22/11/04
Case 6	14/09/04	2 A	Person	21/11/04
Case 7	15/09/04	2 A	Person	21/11/04
Case 8	15/09/04	2 A	Person	18/12/04
Case 9	-	-	Written responses	-
Case 10	17/09/04	2 B	Person	22/11/04
Case 11	-	-	Written responses	-
Case 12	22/09/04	3 A	Phone	21/11/04
Case13	19/10/04	3 A	Phone	23/11/04
Case14	21/09/04	3 A	Phone	22/11/04
Case15	21/09/04	3 A	Phone	01/12/04
Case16	21/09/04	3 A	Phone	03/12/04
Case17	06/10/04	4 A	Person	22/11/04
Case18	19/10/04	4 A	Person	30/11/04
Case19	16/10/04	4 A	Phone	01/12/04
Case 20	26/09/04	3 A	Phone & Written	23/11/04
Case 21	16/10/04	4 A	Phone	22/11/04
Case 22	16/10/04	4 A	Phone	22/11/04