CULTURAL AND SOCIAL FACTORS RELATED TO STUDENT PARTICIPATION AND ACADEMIC ACHIEVEMENT AT THE UNIVERSITY OF ADELAIDE

Mark C. Werner B. Sc., B. Ed. (Adelaide)

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Department of Education,
The University of Adelaide.

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ABSTUDY	Aboriginal Study Assistance Scheme
ACER	Australian Council for Educational Research
CAE	College of Advanced Education
GPA	Grade Point Average
HSC	Higher School Certificate
SACAE	South Australian College of Advanced Education
SAIT	South Australian Institute of Technology
SATAC	South Australian Tertiary Admissions Centre
SC	School Certificate
SPR	Student Progression Ratio
TAFE	College of Technical and Further Education
TEAS	Tertiary Education Assistance Scheme
UK	United Kingdom

SUMMARY

The main aim of the thesis was to investigate factors related to participation and academic achievement in university education with emphasis placed on the language, ethnic and socio-economic background of students.

The review of literature covered factors related to retention rates and educational performance in Australian secondary schools, students' educational aspirations, participation and academic achievement in higher education, and ethnicity and labour market experience. The consideration of Asian overseas students and age structures of ethnic populations in Australia in previous research on the participation of non-English speaking background persons in higher education was investigated.

A questionnaire survey was designed and applied to students who attended Chemistry I, English I and Economics I orientation week lectures at the University of Adelaide in 1990. The number of questionnaires returned was 818. Among other factors, students': birthplace, parents' birthplaces, language study and usage, ethnic identity, degree of social integration, socio-economic background, last type of secondary school system attended, type of financial support, and semester residence were established.

Questionnaire responses were analysed and in relevant situations, compared with Australian Bureau of Statistics Census data and data on 1985 entrants to South Australian higher education institutions available from previous research. Responses to the open-ended question 'What do you hope to gain from your studies at the university?' were also analysed.

The academic transcripts of students who supplied their institutional reference number (70 % of the sample) were obtained and students' 1990 academic achievement data analysed in connection with the questionnaire data. A number of factors were investigated in relation to academic achievement including gender, age, semester residence, whether the student was enrolled in their first preference course or not, socio-economic background, type of secondary school attended, language background, ethnicity and degree of social integration. Factors for which differences in academic achievement were found were investigated again in relation to the 1991 academic achievement data of students who re-enrolled in 1991 to establish if these differences persisted into the second year of study.

Data on whether students enrolled in 1992 were also obtained to enable the cal-

culation of proportions of students in 1990 who re-enrolled in 1991 or 1992. These figures gave an indication of those students who had most likely dropped out from their university studies.

A number of key findings were discussed in the thesis. Those from high socio-economic backgrounds were found to be strongly over-represented at the University whilst those from low socio-economic backgrounds were under-represented. The representation of those from state, Catholic and independent schools was found to be much the same as five years earlier, namely, those from state schools were under-represented whilst those from independent schools were over-represented. The representation of those from Catholic schools was about the same as for the South Australian population. Regarding ethnicity, it was concluded that, overall, those from non-English speaking backgrounds were not under-represented at the University of Adelaide.

A number of significant differences in academic achievement were found. Among them were that females performed better than males, those who relied on casual or part-time work as a source of income performed worse than those who did not, and those who were not enrolled in their first preference course performed significantly worse than those who were. Although the differences were not significant, other indications were that those from state schools were the best overall performers, followed closely by those from independent schools whilst those from Catholic schools were the worst performers.

The academic achievement of non-English background speaking persons as a group was found to be much the same as for those of English speaking background. However, those from non-English speaking backgrounds were more likely to re-enrol in later years. More specifically, those from a non-English speaking European background were found to be the worst overall performers for 1990 but the best performing group in 1991. Results also indicated that those from non-English speaking backgrounds who socially integrated performed better than those who did not.

DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University and, to the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of this thesis.

I consent to this thesis being made available for photocopying and loan if applicable if accepted for the award of the degree.

Signed: .....

Mark C. Werner

November, 1992

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Chapter 1

Introduction

Elitism, Equity and Higher Education

Higher education in Australia has long been seen as and is still seen today by many of the Australian population as elitist due to the difficulty of gaining entry, the limited number of places offered and the rewards that it can bring. Higley et al. (1979) in their research on elites in Australia, stated that:

> One of the features of elites that sharply distinguishes them from mass populations is their educations, especially their university educations.
>
> More than half (55 per cent) [of Australian elites] held at least one university degree (compared with 3 per cent of males aged forty-five or more in 1973), and fully one-quarter held post-graduate degrees (compared with 0.2 per cent in 1973). ... Thus university graduates were statistically over-represented in the national elite by at least eighteen to one (pp. 83–84).

As high paying, high status occupations are highly sought after, so to are the avenues leading to these attainments. Higher education is well recognised as being one of the main avenues as Miller and Volker (1989) pointed out:

> Educational attainment is widely held to be of central importance to the issue of labour market success. The better educated in society generally secure the more prestigious jobs characterised by higher earnings, superior opportunities for training and greater access to superannuation benefits. They are less likely to be unemployed and, should they become unemployed, are fortunate in that they can expect to stay in that state for a shorter than average period (p. 47).

The success of a higher education in securing a high paying, high status occupation is illustrated by the fact that those who attain or hold a higher education qualification

usually hold positions in the higher echelons of society. Indeed, of all persons in Australia who were employed in February of 1988 and held a degree (which represented 10 % of all those employed) 83 % were in one of the professional, para-professional or managerial/administrative occupational categories.[1]

In South Australia in 1990 there were four major higher education institutions. They were the South Australian College of Advanced Education (S. A. C. A. E.), South Australian Institute of Technology (S. A. I. T.), The Flinders University of South Australia and The University of Adelaide. Using available quotas and cut-off entrance scores for undergraduate degree programmes published in the SATAC Guide[2], the following average 1989 cut-off scores were calculated: S. A. C. A. E. 297, S. A. I. T. 325, Flinders 307 and Adelaide 355. These figures indicate that, on the whole, the University of Adelaide was the hardest of the South Australian tertiary institutions to gain entry to. The University of Adelaide, along with Flinders University, were the only institutions in South Australia giving courses leading to the traditionally prestigious and high status degrees of Medicine and Surgery. Also, the similarly high status degrees of Dental Surgery and Law were only obtainable (within South Australia) at the University of Adelaide. These factors tend to place the University of Adelaide in an "elitist" light.

Such issues immediately raise questions about inequality, inequity, disadvantage and discrimination. The more elitist an institution is considered, the more likely it is to be prone to accusations of discriminating against certain groups in society and favouring others. The concern for 'disadvantaged' groups in society with regard to higher education has not always been present however. The 'Murray Report'[3], for example, mentioned little with regard to equality and equity in higher education since these were generally not issues in educational research or Australian society of the 1950's.

However, since the early 1970's, participation and equity have both been given priority concern in education by the Commonwealth government in Australia. These concerns were first directed towards the primary and secondary school sectors before being also recognised within the tertiary education sector. Concerns of participa-

[1]Source: Australian Bureau of Statistics, *Labour Force Status and Educational Attainment, Australia* (Canberra), February 1988.

[2]*The SATAC Guide 1991*, South Australian Tertiary Admissions Centre, 1990.

[3]*Report of the Committee on Australian Universities*, Sir Keith Murray, Chairman, September, 1957, p. 4.

tion and equity in the school gave rise to the Commonwealth Schools Commission's 'Participation and Equity Program' in 1984. One of the main objectives of this programme was 'to make special provision for those students who until now had been prevented from participating fully in the benefits of schooling.'[4] Those considered to be disadvantaged by the Commonwealth Schools Commission in 1985 were, in its words, 'the children of ordinary working people', the children of 'parents with low to middle levels of income', 'ethnic minority groups', 'rural youth' and 'girls'.[5]

Concern about participation and equity in the school sector led to increasing attention being given by the Commonwealth government towards these same factors in the higher education sector. In 1985 the Commonwealth Tertiary Education Commission established the 'Higher Education Equity Program'. The purpose of this programme was to 'increase opportunities for disadvantaged groups to participate in higher education'.[6] Those groups identified as being disadvantaged in higher education were the same as for pre-tertiary education. This was indicated in the following extract from a policy statement:[7]

> The Government will ... provide "seeding grants" to kick off programmes to increase equity and access for women and students from low socio-economic groups and financially disadvantaged families.
>
> Current initiation to assist the participation of Aboriginal people, migrant groups and women will be continued and, where possible, expanded.

More recently in 1990, the Government identified disadvantaged groups in higher education and presented strategies for achieving equity in higher education for these groups in the discussion paper 'A Fair Chance For All'.[8] Those identified as being disadvantaged were people from socio-economically disadvantaged backgrounds, Aboriginal and Torres Strait Islander people, women, people from non-English speaking backgrounds, people with disabilities and people from rural and isolated areas.

In recent years the University of Adelaide itself has addressed the concerns over access and equity. In the University of Adelaide's 1989 'Strategic Plan'[9] it was stated

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[4] *Participation and equity in Australian schools*, Commonwealth Schools Commission, 1983.

[5] *Quality and Equality: Commonwealth specific purpose programmes for Australian schools*, Commonwealth Schools Commission, 1985.

[6] *Annual Report 1985*, Commonwealth Tertiary Education Commission, 1986, p. 17.

[7] *Higher Education: a policy statement*, circulated by The Hon. J.S. Dawkins, MP, Minister for Employment, Education and Training, 1987, p. 6.

[8] *A Fair Chance For All: national and institutional planning for equity in higher education*, Department of Employment, Education and Training, 1990.

[9] *The Future Plan: The strategic plan for the University of Adelaide*, circulated by the Vice Chancellor, Professor K. Marjoribanks, March, 1989, p. 10.

> For more than a decade the University of Adelaide has been operating Special Entry Schemes in an effort to compensate for the disadvantages introduced by socio-economic circumstance, ethnicity and gender on the distribution of access to study.

In June 1991, the university developed an 'Institutional Equity Plan' for the 1991–93 Triennium. Within this plan, people from socio-economically disadvantaged backgrounds, Aboriginal and Torres Strait Islander people, women, people from rural and isolated backgrounds, people from non-English speaking backgrounds and people with disabilities, have all been targeted as part of the university's access policy.

The University of Adelaide also has as section 5 of its Act a declaration stating that "The University shall not discriminate against or in favour of any person upon grounds of sex, race, religious or political belief".[10] 'Race' is in popular English usage often equated with 'ethnicity'. This is illustrated by the Oxford Dictionary definition of 'race' given as "group or class of persons, animals, or things, having some common feature or features"[11] Here, the 'feature' or 'features' could be interpreted as those which distinguish one ethnic group from another, for example, culture, language or religion. Also, as religion and political beliefs are explicitly mentioned in this item of the act, these factors being common differences between ethnic groups, it follows that this item of the University Act also implies that discrimination shall not take place on the grounds of ethnicity. This item of the Act was first introduced in 1972 replacing an item declaring that no religious test would be administered to potential students, graduates or office holders of the University.

The University of Adelaide has a number of schemes in place to assist access of those groups identified as being disadvantaged. The 'Special Entry Scheme', which has been in place since 1975, targets mature age students and students who have not completed secondary education, that is, early school leavers. The 'Fairway Scheme' commenced full operation in 1990. This scheme targets socio-economically disadvantaged students. The scheme works by targeting students from schools that are under-represented at the University and adding a compensatory loading to these students' Year 12 scores so as to allow a more equal chance of access to the University.

Many other tertiary education institutions in Australia also have in place special admission schemes in order to improve access for disadvantaged groups. Among

[10] *The University of Adelaide Calendar 1988–1989*, p. 14.
[11] *The Shorter Oxford English Dictionary*, 1968, p. 1646.

them are the University of Melbourne's Special Entry Scheme which aims not only to improve access for disadvantaged groups but also to 'develop a greater social mix amongst the student body of the University' (Toomey, 1987, p. 1).

Inequality and inequity in admission to higher education is not just a concern in Australia but also in some overseas countries. An illustration of this fact is given by the allegations of bias in admission of students to the University of Edinburgh. The University was accused of favouring students from other parts of the United Kingdom over students from Scotland and of giving preferential treatment to applications from students from fee-paying schools, particularly those in England.[12]

The Nature of Disadvantage

One inevitably has to ask the question "What is meant by a 'disadvantaged' group in society with regard to higher education ?" In the 1985 Karmel Report[13] disadvantage was defined as follows:

> Disadvantage in special groups is demonstrated to the extent to which individuals in the groups fail to gain access to further education, employment, high status occupations and high incomes in broad conformity with the rest of the community.

Other statements such as

> Research into educational *disadvantage* demonstrates that, despite considerable effort in recent years, substantial *inequities* in access to higher education remain for some groups in the population ... [my italics] [14]

and

> ... a combination of measures is required to increase both the enrolment and the success rate of disadvantaged groups.[15]

implicitly equate 'disadvantaged groups' with 'those groups which are under-represented in enrolment numbers or success rates'. It would appear then, that mere numbers of students enrolling and graduating form the sole basis of whether or not a particular group in society is to be seen as 'disadvantaged' in higher education. Thus

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[12] *University of Edinburgh Annual Report 1987/88.*

[13] *Quality of Education in Australia*, Karmel, P., (Chairman), Report of the Review Committee, 1985, para. 14.62

[14] *Setting the Course*, Report by the House of Representatives Standing Committee on Employment, Education and Training, May 1988, p. 21.

[15] ibid. p. 22.

although a particular group in society may have a greater *opportunity* to participate in higher education compared with the general population, it will still be considered as a disadvantaged group if it is under-represented. If a person from group ξ in society receives an offer to his/her first preference course in a higher education institution but willingly opts to stay and work in his/her parents' business say (such behaviour being the cultural norm of group ξ), then can this person or group be considered as disadvantaged with respect to higher education ?

It is not enough just to look at representation alone to determine which groups in society are advantaged or disadvantaged. Rather, having found which groups in society are over or under-represented, one has then to look at factors such as aspiration, motivation and cultural values towards higher education before being able to truly identify which groups are advantaged or disadvantaged.

Hester (1991) had a similar view. He viewed a disadvantaged group in higher education as being not merely a group that was under-represented when compared to the equivalent proportions in the general population, but an under-represented group whose under-representation was, at least in part, *involuntary.* Hester (1991) also explained the term 'systematic disadvantage' as covering 'both overt and hidden rules and structures working against a disadvantaged group.'

Ethnicity and Equity in Higher Education

As far as minority ethnic groups and migrant groups are concerned, the Commonwealth government has run a number of programmes to help these groups achieve a full secondary education. The main objective of the programmes was to improve the English language competence of students whose first language is not English. The first such programme was the Schools Commission's 'Child Migrant Education Program' introduced in 1971. Later, other programmes were introduced, not with the aim of increasing the participation rate of minority ethnic groups in school education but to 'cater for the needs of a multicultural society.' The 'Multicultural Education Program' was established in 1979 by the Schools Commission with the aim to 'encourage schools to respond to the multicultural nature of Australian society'.[16] Such a programme was directed towards the whole of the Australian school population, not just specific groups within it. To assist ethnic minority groups to maintain

[16] *Triennium 1982–84: Report for 1982,* Commonwealth Schools Commission, 1981, p. 23.

their ethnic culture and language in Australian society, the Commonwealth Schools Commission launched the 'Ethnic Schools Program' in 1981. This programme provided grants to assist in the provision of community language and related cultural programmes through part-time ethnic schools or insertion classes in regular schools.

It would appear, however, that when ethnicity and higher education are considered in relation to participation and equity, only one group in Australian society has been singled out for major special investigation and assistance from the government, namely, the native Australians — the Aboriginals. This was made clear by the following statement made in a report by the Commonwealth House of Representatives Standing Committee on Employment, Education and Training:[17]

> 3.16 The groups which are most clearly underrepresented [in higher education] and which receive the attention of special access programmes are Aborigines, people from financially disadvantaged backgrounds, and people from rural and isolated areas.

Aborigines have been given special assistance in attaining places in higher education by way of special entry schemes, funds provided by the Commonwealth Aboriginal Participation Initiative (a programme of earmarked places for Aborigines in higher education) and Special Course funding given under the Aboriginal Study Assistance Scheme (ABSTUDY) which provides financial assistance for entry courses and support arrangements for Aboriginal students. Such assistance has not been specifically offered to any of Australia's many other minority ethnic groups, even though the Commonwealth Government is well aware of the existence of other disadvantaged ethnic groups:

> There is also wide variation in participation among ethnic groups. Particular migrant groups are severely under-represented in higher education, and people from non-English speaking backgrounds encounter special language and cultural barriers to success.[18]

With most research into inequity in higher education, factors such as sex of student, educational qualifications held by students' parents, income level of students' parents and secondary school achievement of students have usually been taken into account. When one considers that Australia is one of the most multicultural nations

[17] *Setting the Course*, op.cit. p.23.

[18] *Higher Education: a policy discussion paper*, circulated by The Hon. J.S. Dawkins, MP, Minister for Employment, Education and Training, December 1987, p.21.

in the world, it is surprising to find that very little detailed research has been done on inequity in higher education with regard to the ethnic background of students. This is especially so when one considers the increasing concern being given by governments and other bodies over minority ethnic groups in relation to inequity and inequality in higher education.

Discrimination and Equity in Higher Education

Gender has, for some time now, been a subject gaining much attention with regard to inequity and discrimination in higher education. This has often been considered at a fairly simple level. If a particular course or institution had a greater number of males enrolled than females, it was considered to be discriminating against females. In order to be seen as a 'fair' course or institution, steps would have to be taken in order to increase the number of females enrolling. Engineering, for example, has regularly been singled out as it is a typically male dominated course and as such is considered to be discriminating against females. Female enrolments represented only 9 % of Australian higher education engineering enrolments in 1989.[19] It is interesting to note, however, that little is said regarding 'discrimination' against males in typically female dominated courses such as women's studies and nursing. In 1990, for example, females represented 87 % of all nursing enrolments.[20] An explanation for this situation may be that males were not discriminated against or disadvantaged for they were given the same *opportunity* to do nursing as females but they were not as motivated or interested in seeking enrolment in such a course thus leading to a greater number of females than males being enrolled. A similar argument can, of course, be applied to the engineering situation.

In a similar manner, a group in society (whether it be selected on the grounds of educational achievement, income level or ethnicity) will be considered as disadvantaged if its proportional representation is lower in the course or institution under consideration when compared with the proportional representation in society in general.

Although under-representation of a group in society may be explained by that

[19] *Engineering Students*, Higher Education Series Report no. 6, Department of Employment, Education and Training, 1990.

[20] *Female students*, Higher Education Series, Report no. 12, Department of Employment, Education and Training, 1991.

group not having a high motivation or interest to enter higher education, this does not automatically exclude the possibility of discrimination. It may be that a particular ethnic group, for example, does not take a great interest in higher education due to the *content* of higher education and its irrelevance to the culture of the ethnic group. In this sense, higher education could be seen as discriminatory due to the vast majority of courses being traditionally structured around the cultural knowledge and values of one group of society, namely, the Anglo-Australians. Until a greater proportion of higher education courses satisfy the cultural needs and wants of under-represented ethnic groups, higher education could be viewed as being discriminatory. The need for a culturally inclusive curriculum in the secondary school sector has been recognised for some time. Sloniec (1991), for example, mentioned a number of programmes carried out in South Australia since the 1970's '...to ensure that the curriculum is reflective of the diverse cultural and linguistic communities that constitute school populations' (p. 49). Sloniec pointed out that one of the most important reasons for having a culturally inclusive curriculum is that secondary students themselves want culturally inclusive knowledge. Thus it is most probable that many students would also want a culturally inclusive curriculum in higher education. If such a curriculum is not available, then many students may not have the motivation or desire to undertake higher education.

Another way in which higher education institutions could be seen as discriminatory is by the giving or supplying of information about admission, courses offered et cetera in the language of the majority group, namely English. This immediately puts those in non-English speaking groups of society at a disadvantage. A child is guided through its formal educational years principally by its parents. The parents decide upon which primary and secondary schools their children will attend and to a large extent, what subjects are to be studied. If the parents are mainly non-English speaking or have difficulty in understanding English, the chances are that they will lack a sound knowledge about avenues of entry to university, entry requirements for courses at university and the most appropriate subjects to be studied at secondary school level for different university courses due to their difficulty in understanding literature about these topics which have been written in English only, or due to their inability to communicate effectively with English speaking school or university personnel who have the knowledge about these topics. Such parents would not be in a

position to effectively guide their children to give them the maximum opportunity to develop their educational abilities.

It is, however, unfair to lay all of the responsibility of alleviating inequity and inequality in higher education onto higher education institutions when many of the above problems may well have arisen initially in the lower educational levels, namely, the primary and secondary education sectors. If certain groups in society perform poorly at primary and secondary levels resulting in lower proportions successfully completing secondary school when compared with society in general, then these groups will be far less able to gain admission to higher education. This results in these groups being under-represented in higher education leading to higher education institutions being accused of inequality with regard to selection and admission procedures. If the problems causing inequality at higher education levels are dealt with adequately in primary and secondary schools, one may well find that inequality is substantially reduced or eliminated in higher education.

Miller and Volker (1989), in their examination of educational continuation decisions of Australian male secondary students from year 10 to tertiary entrance, found:

> ... considerable differences in the predicted probability of undertaking tertiary education, with the most marked variations being associated with the socio-economic status of the family, parent's educational attainment, school type and ethnic origin. These differences derive largely from differences in the probability of completing high school. ... One interpretation of this result, therefore, is that all male high school graduates have approximately equal access to tertiary education (pp. 55–56).

Support for this finding came from Williams et al. (1987, p. 115) who found that 'Other things equal, among those eligible to enter higher education by virtue of having completed Year 12, there is no socioeconomic imbalance to speak of.' These findings led Miller and Volker (1989) to conclude that:

> Policies aimed at altering the social composition of high school graduates or tertiary sector participants should therefore be aimed at the Year 10 threshold or at even earlier stages in the educational process (p. 47).

Despite considering all the factors which might be actually discriminating against certain groups in society, the facts in many cases may simply be that some such groups, no matter how much opportunity and support they may be given to go onto higher education, do not value higher education as a desirable destination. This

inevitably results in such a group continuing to be under-represented in higher education. In such cases it is pointless to continue claiming "inequity" and "disadvantage".

Much has been said about the over or under-representation of certain groups of society in higher education but less about the academic performance or progression of those in these groups who do embark upon university studies. Most work in this area has focused upon the proportion of students passing or failing, or completing their degrees in the minimum time. A higher than usual failure rate, or lower than usual completion in minimum time, are other criterion which have been used to establish whether or not students from a particular group in society are to be considered as 'disadvantaged'.

Graduating Rates

One aspect of higher education which has received the Commonwealth Government's priority attention has been the overall number of students enrolling and graduating. The attention given to graduating rates was caused by concern, not for the quality of higher education, but for economic and political reasons. High student failure rates, or 'wastage', have long been viewed as a waste of tax-payers' money, as was indicated in the 'Murray Report':

> One of the most disturbing aspects of university education in Australia is the high failure rate ... Such a high failure rate is a national extravagance which can ill be afforded.[21]

More recently, the Commonwealth Government's 'Green Paper' [22] has identified a need to raise the level of education of the Australian workforce in order to foster economic growth. In trying to achieve an annual graduation figure of about 125 000 by the year 2001, the Government would include "improving graduation rates through the elimination of unnecessary wastage." [23]

Aims of the Thesis

The first objective was to review the previous research regarding student participation and academic achievement in the secondary and tertiary education sectors with

[21] *Report of the Committee on Australian Universities*, op. cit. p. 4.
[22] *Higher Education: a policy discussion paper*, op. cit.
[23] *Setting the Course*, op. cit. p.4.

particular emphasis being given to research dealing with non-English speaking background persons. In reviewing the literature, the methodology behind some research findings were analysed and criticised. For example, in establishing participation rates for various ethnic groups in higher education, did the researcher give consideration to the different age structure of ethnic groups compared with the general or higher education student populations ? Also, were full fee paying overseas students included in the data ? Being related to educational background, the literature regarding ethnicity and labour market experience was also reviewed.

Having reviewed the literature, attention was then given to the analysis of data on a sample of students at the University of Adelaide obtained via a questionnaire survey and students' academic transcripts, the aim being to identify groups of students who were over or under-represented, or who had higher or lower than average academic performance at the University of Adelaide. Where differences were found in the academic performance between groups, social and cultural factors which may explain these differences were investigated. Differences may be explained by why the student chose a particular course. For example, was it due to parental pressure, to avoid written English or purely out of the student's own aspirations and interests ? Or, stronger explanations may be found in how satisfied a student is with the content of courses offered, whether students were enrolled in their first preference course, the satisfaction gained from study, the extent to which a student socially integrates, or the type of semester residence.

Having investigated such factors in relation to students' 1990 academic results, those factors for which differences in performance were found were investigated again in relation to the 1991 academic results of students who re-enrolled in 1991, the aim being to establish whether or not differences found in the first year of study persisted into a second year of study.

Although previous research has investigated a number of factors in relation to performance in education, these factors have not been linked to the cultural background of students. One of the aims of the thesis was to link the cultural or ethnic background of students with other factors investigated in relation to academic performance to help explain why some ethnic groups might over or under-perform at the university.

Chapter 2

Review of Previous Research

In reviewing research dealing with participation in education and academic achievement, with particular emphasis placed upon the influence of ethnicity with regard to these factors, three main areas of research became apparent: research dealing with primary and secondary school education including retention rates to year twelve and educational performance; the transition from secondary school to tertiary education including aspirations for and access to higher education; and research dealing with tertiary education alone where participation, academic performance and progression rates were all considered.

The review commences with research done on secondary education before moving onto research done on the tertiary education sector. Primary education will not be covered as it is considered to be beyond the scope of this paper. The importance of primary education in the overall picture should not go unrecognised, however, for its effects on higher education are present in a 'domino effect'. That is, the effectiveness of secondary education in overcoming inequalities and inequities in educational participation and performance has a direct bearing upon these same factors in higher education, while the same is true for the relationship between primary education and secondary education.

Students' experience of secondary school is a very important factor in the determination of whether or not they will seek admission to the higher education sector and if this admission is sought, whether admission is granted or not. If a negative attitude towards education is formed in the secondary years, chances are that the secondary education will not be completed thus making the future likelihood of undertaking higher education extremely low; or if secondary school is finished, any

desire to undertake higher education may be quashed. Even if secondary students are motivated towards undertaking higher education, their secondary education may be inadequate in overcoming problems which will either prevent them from achieving well enough in order to gain entry to higher education, or to perform well enough in higher education if entry is gained. For example, if secondary education is unsuccessful in overcoming language problems then these same problems are likely to hamper success in higher education.

2.1 Secondary School Education

2.1.1 Ethnicity and Retention Rates

Research on ethnicity and secondary school education deals with a much larger proportion of the school population than what may first be thought. In a report to the South Australian Minister of Education[1], it was stated that in 1976 11 % of country and 24 % of metropolitan secondary school students were of ethnic background (ethnic in this case meaning the student, or at least one parent, was born in a non-English speaking country). The figure for all primary and secondary schools in South Australia was 20 %. Also, on an Australia wide basis, it has been claimed that "one in seven school children comes from a home where English is not the first language and seldom heard there."[2]

One of the most in depth studies made of Australian secondary school students was the longitudinal survey of Sydney high school students entitled 'The Educational Experience of Sydney High School Students' which comprised of three reports (Martin & Meade, 1979; Meade 1981, 1983). The survey came about from a need for research on child migrant education expressed by the Commonwealth Immigration Advisory Council in 1972. The Council's main concern was the difficulties experienced by migrant school children. Not only the English language learning but also the social aspects of migrant education were suspected of causing difficulties. The 3043 students in the survey were selected from sixteen Sydney state high schools in the metropolitan area. Material collected over a five year period and analysed in the survey included

[1]South Australia, Report to the Honourable The Minister of Education, *Ethnic Students in Secondary Schools*, 1977.

[2]Australia. Department of Education, Training and Employment, *Report of the Committee of Inquiry into Education and Training*, 3, 1977, p. 44.

information on students' personal and family background, educational performance and motivation/aspirations towards education.

Although it was found that the majority of students, regardless of own or parents' birthplace, did not continue on to the HSC (Higher School Certificate), a greater proportion of students with both parents born in non-English speaking countries (41 %) continued to the HSC compared with those with both parents born in Australia or another English speaking country (30 % and 35 % respectively). It is interesting to note that of the broadly classified groups, the one with the highest continuation to the HSC, 43 %, were students with one parent born in a non-English speaking country and the other in an English speaking country. Similar results were found by Williams et al. (1987), namely, students whose fathers were born in non-English speaking countries completed Year 12 at a substantially higher rate than students who were born in either Australia or another English speaking country.

A greater retention rate among students from non-English speaking backgrounds has also been found in a number of other studies. Taft (1975a, 1975b) found that working class students with both parents born in a non-English speaking country tended to stay at school longer than their Australian peers and were more likely to complete Year 12 at secondary school. Similarly, Connell et al. (1975) found greater retention among second generation migrants than for Australians, in the lower socio-economic classes. Rather than using the birthplace of parents, Rosier (1978) used language spoken at home as an indicator of the ethnic background of a student. He found that after controlling for basic family environment variables and gender, the retention rate for students for whom English was not the only language spoken at home was higher than for those from an English only speaking home environment. In both studies of retention in Government schools conducted by Ainley et al. (1984a, 1984b) (Australia wide and Victoria respectively), it was concluded that the greater the proportion of students of non-English speaking background entering a school, then the greater the retention rates were within the school.

On a more specific level, Martin and Meade (1979) and Meade (1983), found that of the specific ethnic groups identified, those from Greek backgrounds where most likely to complete the HSC (57 %) compared with Yugoslavian 46 %, Italian 39 %, Lebanese 27 % and Maltese with the lowest HSC completion rate of 8 %. Of those with Australian born parents 30 % completed the HSC thus indicating that

those with Greek, Yugoslavian and Italian parents completed the HSC at a higher rate than those with Australian parents, while the reverse was true for those with Lebanese or Maltese parents. In agreement with Martin and Meade, Young et al. (1980) found that Lebanese and Turkish youth completed the HSC at a much lower rate than their Australian born peers. Further support for the findings of Martin and Meade came from the analysis of 1981 census data by Birrell (1987). In analysing the proportions of Australian born persons aged 15 to 19 years still attending school by the birthplace of parents, he found that those with a Greek background had the highest proportion still attending school followed by those of Yugoslavian, Italian, and German backgrounds respectively in descending proportions (see table 2.1). All these four groups had higher proportions still attending school than those with both parents or father only born in either Australia or the United Kingdom and Ireland.

Table 2.1: Percentage of Australians born aged 15–19 still attending school by birthplace of parents*, 1981.

Birthplace of parents*	Females	Males
Australia	34.3	32.2
U.K. & Ireland	37.1	36.4
Germany	41.5	38.1
Greece	59.7	60.4
Italy	44.8	43.8
Yugoslavia	50.0	49.1

Source: Australian Bureau of Statistics 1981 Census, Table 52 (microfiche). (Data extracted by Birrell (1987, p. 105)).

*These figures combine students with both parents and father only born in a particular country.

Birrell (1987, p. 104) stated that the information given in table 2.1 should be interpreted cautiously since 'young people engaged in apprenticeships were excluded: the Greeks, in particular, have a low rate of apprenticeship training.' Another factor in interpreting the above 1981 census figures not mentioned by Birrell is the possibility that a higher proportion of English speaking background persons aged 18 or 19 may have already completed their high schooling whereas greater proportions of non-English speaking background persons aged 18 or 19 may still have been attending school due to poorer academic performance leading to the repetition of grades. In other words, a higher proportion of 15–19 year olds from a particular ethnic group

still attending school does not necessarily mean that this group successfully completes schooling at a higher rate.

The findings of Miller and Volker (1989) gave further general support for the earlier findings of Martin and Meade (1979) and Birrell (1987). They found that 'Compared to second-generation Australians, students whose fathers were born in Mediterranean countries appear much more likely to continue on at school than other groups.' (p. 54). They found further that students who had a father born in Asia, a group not specifically targeted by Martin and Meade or Birrell, had the highest probability of all for continuing on to the last two years of school. This finding supported the earlier finding of Bullivant (1987), whose case studies of seven schools in Melbourne revealed Asian students to be the most successful.

Not all research in this area is in agreement; although Meade (1984), for example, found that Greek and Yugoslavian students were much more likely to continue on to the HSC than Australian students, Connell et al. (1975) included these ethnic groups among those who were *less* likely to complete secondary school than Australian students. Connell et al. also found that these ethnic groups, along with Northern and Southern Italians, were the migrant groups most likely to drop-out from school after fifteen years of age.

Thus although research consistently shows that students from non-English speaking backgrounds in general stay at school longer and complete secondary schooling at a higher rate than Australians, there are some conflicting results when specific ethnic groups are considered. Care must also be taken when generalising across all immigrant groups. As Connell et al. (1975) found, although second generation Australian immigrants tend to stay on at secondary school longer than their Australian peers in lower socio-economic classes, a number of particular ethnic groups did the reverse. Martin and Meade (1979) showed that there was also a greater variation in retention and educational performance between different non-English speaking groups of students than between all students of non-English speaking origin and those of Australian or other English speaking origin.

One of the most important variables determining completion of secondary school by students with overseas born parents was clearly illustrated by Meade (1983), namely, the students age on arrival (or whether the student was born in Australia). For students with both parents born in non-English speaking countries, the respective

proportions of those completing the HSC who were born in Australia, arrived before ten years of age, or arrived after ten years of age were 44 %, 40 % and 32 %. The same trend also occurred for those students with both parents born in another or different English speaking countries.

Although sample numbers became quite small, when Meade (1983) considered specific ethnic parentage and whether the student was 'Born in Australia or arrived before ten years of age' or 'Arrived ten years of age or over', in every ethnic group considered, the likelihood of completing secondary school was very much lower if the student was in the latter category, as is shown in table 2.2. This factor would seem to go a long way in explaining the results of Young et al. (1980), for example, who

Table 2.2: School accreditation by age at arrival in Australia.

Parents Country of Birth	Born in Australia or arrived before age 10			Arrived 10 years of age or over		
	Left before SC*	Left after SC but before HSC**	Remained to HSC	Left before SC	Left after SC but before HSC	Remained to HSC
	per cent distribution			per cent distribution		
Both Greek	5	35	61		88	13
Both Italian	11	49	40	33	50	17
Both Lebanese	7	56	37	32	58	10
Both Maltese	20	71	9			
Both Yugoslav	10	34	55	9	59	32
Another non-English Speaking Country (both same)	5	54	41	5	58	37
Different non-English Speaking Countries	8	52	40	12	41	47
Total non-English Speaking	8	49	43	10	58	32

Note : Where total number is less than five, no percentages are shown.

* School Certificate

** Higher School Certificate

Source : Meade (1983, p. 116).

found that young people from Turkish and Lebanese ethnic groups both of which made up a large portion of recent arrivals to Australia, participated in secondary

schooling in lower proportions compared with Australian born youth. It is striking to note that for every category of parents born in non-English speaking countries in table 2.2, except for Maltese, the percentage of students remaining to the HSC who were either born in Australia or arrived before age 10 was higher than for students with either both parents born in Australia (30 %), or both parents born in another or different English speaking countries (35 %). The most probable reason why more recently arrived migrants left school earlier was language difficulties.

Marsh (1988) mentioned a number of political, communication and cultural factors that could inhibit the amount of participation of non-English speaking background students in secondary education. Parents from different cultural backgrounds may not understand the ideology of the school system and have very different views on the intended outcomes for their children. As much information with respect to the secondary school system is not available in multilingual form, many non-English speaking background immigrant families may not be aware of the special assistance available for their children entering Years 11 and 12 (Marsh, 1988, p. 3). A number of cultural factors that could inhibit the participation of non-English speaking background persons was also mentioned by Marsh (1988, p. 3):

- illiteracy or semi-literacy in the home language,
- lack of previous education, especially for the Indo-Chinese,
- education interrupted by was and civil disturbance,
- different age status and definitions of adulthood,
- co-educational schools inappropriate, and
- male student resistance to female teachers.

2.1.2 Ethnicity and Educational Performance

Although it has been shown that, in general, secondary school students from non-English speaking backgrounds have *higher retention rates* than other students, those from certain non-English speaking groups have *lower educational performance* than other students. Meade (1983) found that of those who completed the HSC, 27 % of those with Australian born parents achieved only a low HSC result compared with

37 % of those with both parents born in a non-English speaking country. The same trend also applied for the SC (School Certificate) results. When high HSC results were observed, the trends were reversed with 33 % of those with Australian born parents achieving a high result compared with only 27 % for those with both parents born in non-English speaking countries. Again, the same trend applied for the SC results.

Adapted from Meade (1983, p. 110), table 2.3 below considers some specific categories of parentage. Greater proportions of those with parents born in non-English speaking countries generally achieved only a low SC or HSC result than those with Australian born parents, while lower proportions achieved a high SC or HSC when

Table 2.3: Performance in School and Higher School Certificates by ethnicity.

Parents Country of Birth	Left after SC but before HSC			Remained to HSC		
	Low school cert.	Medium school cert.	High school cert.	Low HSC (0–211)	Medium HSC (212–297)	High HSC (298–489)
	per cent distribution			per cent distribution		
Both Australian	45	34	21	27	40	33
Both Greek	64	23	13	41	33	23
Both Italian	58	32	10	31	33	36
Both Lebanese	67	30	4	48	37	15
Both Maltese	63	30	7		38	63
Both Yugoslav	57	35	9	52	35	13
Another or Different non-English Speaking Countries	53	30	18	31	40	29
One Parent English Speaking other non-English Speaking	44	40	16	35	28	37

Note : Where total number is less than five, no percentages are shown.
Adapted from : Meade (1983, p. 110).

compared with those with both parents born in Australia. The only exceptions to the rule were the Italian, Maltese[3] and 'One parent English speaking other non-English speaking country' categories where a greater proportion achieved a high HSC compared with the Australian born category.

[3]The Maltese group being an exception here may be due to the very low sample numbers for this group.

Other studies also concluded that those from non-English speaking backgrounds generally did not perform as well as those from English speaking backgrounds (including Australian). Taft (1975b, p. 41) stated that "Children of non-English immigrants are slightly less successful in examinations than students with an Australian or an English speaking immigrant background." In agreement with the findings of Meade and Taft are the results of Williams et al. (1980), who after administering Word Knowledge, Literacy and Numeracy tests to their sample of secondary school students, found that those born in non-English speaking countries performed worst of all out of each of these tests when compared with those born in Australia or another English speaking country. Further, the worst performance was recorded in the Word Knowledge test, followed by the Literacy and Numeracy tests.

Another study which involved the administering of reading and numeracy tests was conducted by Hewitt (1977) who found that the amount of English spoken at home was *the* most important factor influencing educational performance. Hewitt's sample consisted of 1700 students of non-English speaking backgrounds and over 12 000 students born in Australia. He found that 59 % of 10 year old and 43 % of 14 year old students from non-English speaking backgrounds failed to reach the 80 % mastery level on reading tests, administered by the researchers, compared with 47 % and 28 % of students of Australian parentage respectively. As far as the numeracy tests were concerned, although students from non-English speaking backgrounds still had lower proportions reaching the 80 % mastery level when compared with students of Australian parentage, the levels where closer to the figures for Australia overall than was the case for the reading test results. Using data from the Williams et al. (1980) study, Vlahonasion (1982) found that, with 'all' other factors controlled for, (for example, geographic location and socio-economic status), students from non-English speaking backgrounds experienced a 15 % disadvantage on reading tests but only a 4 % disadvantage on numeracy tasks relative to Australian born students.

Spearitt and Colman (1983) investigated the reading and numeration proficiency of newly arrived Indo-Chinese primary and secondary students after they had received six months of specialist English language courses. They found that even after these courses, these students had much lower scores in both the reading and numeration tests than Australian born English speaking background students and Australian born students from non-English speaking backgrounds from homes where little or no English

was spoken. The same cohort of Indo-Chinese students were tested again after being in mainstream classes for between three and eight months and again performed far worse than other groups of students in both reading and numeration tests.

Thus the research of Williams et al., Hewitt, Vlahonasion and Spearitt and Colman all point to English language proficiency as being one, if not *the* most important factor in determining educational achievement at school.

2.1.3 Educational Aspirations

Another major factor commonly investigated in research dealing with education and ethnic groups is the *aspirations* of the students and their parents towards education. A number of research studies (including Taft (1975b), Marjoribanks (1979 & 1980), Meade (1983) and Ainley et al. (1984)), have concluded that, relative to those students from English speaking backgrounds, those from non-English speaking backgrounds in general had very high educational aspirations. Taft's study concentrated on the retention of students and students' educational aspirations with regard to three variables, namely, the student's sex, social class background and ethnic background. It was found that the educational aspirations of students from non-English speaking backgrounds were higher than for Australians, particularly in the working class where 51 % of non-English background immigrants (excluding very recent arrivals) intended to reach Form Six or beyond compared with only 36 % of the Australians. It was also found, in the working class, that considerably more non-English speaking background males, 66 %, aspired to Form Six compared with 36 % of females. In agreement with Taft (1975b), Ainley et al. (1984) also found that those from non-English speaking backgrounds were more likely to intend to complete a full secondary education than those with Australian born parents, and that these intentions were more prevalent amongst non-English speaking background males than females.

Meade's (1983, 1984) Sydney study found that 68 % of students with both parents born in non-English speaking countries aspired to the HSC compared with 53 % and 60 % of those with both parents born in Australia or 'another or different English speaking countries' respectively. Table 2.4 below gives the percentages of students aspiring to Form Six or the HSC by specific ethnic groups, as was found by Taft (1975b) and Meade (1983). Unfortunately, Taft does not give the specific criteria used for placing students within a 'national group' category, thus it is unclear as to

Table 2.4: Educational aspirations of specific ethnic groups.

Category*	Taft (1975b) Percentage aspiring to Form 6 or beyond			Meade (1983) Percentage aspiring to HSC
	Male	Female	Total	
Australian	51	43	47	53
British (U.K.)	55	39	47	na
Greek	66	52	59	85
Italian	54	19	41	59
Maltese			24	29
Yugoslav	56	52	54	74
Lebanese	na	na	na	63
German/Dutch	65	39	51	na
Jewish	100	75	89	na

Note : Where total number is less than five, no percentages are shown.

* Taft : 'National group' (Unfortunately, Taft does not give the specific criteria used for placing a student within a 'national group'.)

Meade : Both parents country of birth.

Adapted from : Taft (1975b) and Meade (1983).

whether Taft's classifications correspond exactly with those of Meade. Nevertheless, both studies reveal similar trends despite having been conducted some ten years apart. Both studies pointed to the higher aspirations of the Greek and Yugoslavian groups and the lower aspirations of the Maltese group when compared with the Australian category. The only conflicting result was for the Italian category where Taft found them to have lower aspirations than Australians, while Meade found the reverse. Both Meade (1983) and Rosier (1978) have illustrated that the higher the aspirations, then the greater the retention rate. However, high aspirations need not necessarily be transformed into higher educational achievement, since other factors may intervene which prevent these aspirations from being fulfilled.

There are many variables involved in determining a student's level of aspiration towards education. The aspirations, expectations and success of student's parents, peers and teachers all play a part in forming the aspirations of the student. There have been a number of reasons given for migrant students having, in general, higher educational aspirations than their Australian born peers. One explanation is that because migrant parents often have an unskilled job and a low status exacerbated by a lack of education and mastery of English, they often felt that their only chance of success was to

experience it vicariously through the achievements of their own children (Meade, 1983, p. 58). Smolicz and Wiseman (1971) saw migrants with little or no property or social standing in the community as having a 'migrant drive', a type of social mobility orientation whereby their lack of property or social standing would be made up through their children's success via education and careers. Another explanation was put forth by Martin and Meade (1979) that, rather than the school being seen by migrants as an avenue for success for their children, it was, above all, seen by migrants as a socialising agency with the job of turning migrant children into Australians.

A number of studies have investigated parental attitudes and aspirations for their childrens' education. Taft and Cahill (1978), in their two year longitudinal study of recent South American, British and Maltese immigrant families, found that South Americans had the 'highest and most consistently stable aspirations for their children' (p. 87), followed by the Maltese with 'relatively high educational aspirations for their children, at least for the males' (p. 89), this latter finding being in conflict with the above findings of Taft (1975b) and Meade (1983). In a study of parental attitudes and aspirations for their childrens' education among British, Greek, Italian, Yugoslav, Turkish and Australian ethnic groups, Browning (1979) found that the Turks and Greeks had the highest aspirations for their children while Australian and Italian parents consistently had lower aspirations.

Meade (1983) asked his sample of grade 9 and 11 students to rate the importance of a number of categories as reasons for their educational aspirations. It was found that the greatest differences between students with both parents born in English speaking countries (including Australia) and those with both parents born in non-English speaking countries, occurred in the 'Enjoyment of learning', 'Mother wants it' and 'Father wants it' categories. Non-English speaking background students (both grades 9 and 11) placed around 12 % greater importance on 'Enjoyment of learning' as a reason for their educational motivation than English speaking background students (including Australian). For grade 11 students, those of non-English speaking background placed around 13 % greater importance on both the 'Mother wants it' and 'Father wants it' categories than for the English speaking background students. Although the same trend occurred for the grade 9 students, the differences were not as great. These data point to the greater influence that non-English speaking migrant parents have in the making of family decisions about their children's schooling.

Other groups have also been shown in a number of other studies to have greater educational aspirations. As Meade (1983, p. 57) pointed out earlier, studies have shown that males and the middle class had higher educational aspirations than females and the working class respectively.

2.1.4 Other Variables Concerned with Retention and Performance

Many other factors have been researched in relation to retention rates and performance. Among them are I.Q., socio-economic status, gender, the type of school system (government, Catholic or independent) attended, whether a rural or urban school was attended, and family size. The bulk of this research has originated from British and American studies.[4] With regard to I.Q., Meade (1983) found that regardless of ethnic background, those with a higher I.Q. were much more likely to remain to the HSC and to perform better than those with a lower I.Q.

The relationship between socio-economic status and educational attainment would have to be one of the most documented relationships in educational research, with the vast majority of this research concluding that the higher the socio-economic status of a student's background, the greater the tendency for that student to complete a full secondary education. Using variables such as father's occupation, mother's and father's education levels, and family wealth, Rosier (1978), Williams et al. (1980), Meade (1983), Ainley et al. (1984), Williams (1987), Prior and Beggs (1989), Miller and Volker (1989) and many more, have all found a positive correlation between socio-economic status and retention. Miller and Volker (1989) found parental education levels to be one of the most influential socio-economic factors in determining retention at high school. They found further that the mothers' educational levels were more influential than the fathers' educational levels with the probability of high school graduation being 27 % greater for those with a mother holding a university degree, whilst the corresponding figure for fathers was only 19 %. Although the positive relationship between socio-economic status and retention at school may be the general overall trend and even the trend for students from non-English speaking backgrounds as a whole, the studies of Meade (1983) revealed some particular ethnic groups for which this trend

[4]See Marjoribanks (1979, 1980) for references of overseas research in these areas.

was reversed, namely, those with parents being both Greek or both Yugoslav. For both of these groups, it was found that the proportion of the lower socio-economic status category remaining to the HSC was about 10 % greater than for the higher socio-economic status category.

Gender is another variable commonly investigated in relation to educational attainment. Regularly published retention data have shown the growth in female retention rates from the early 1970's into the 1980's. Rosier (1978), whose data were collected in 1970 and 1972, found that in all states of Australia, retention at schools was greater for males than for females. On the other hand, Williams (1987), using data collected in the 1980's, found that for both of his samples, females had completed Year 12 at a higher rate than for males. Ainley et al. (1984, p. 48) gave a table showing the increasing proportions of females, from minority to majority, in both government and non-government schools over the period 1972 to 1983. Meade's (1983) survey, in which data were collected over the period 1974 to 1978, also found that a slightly higher proportion of females than males (by 4 %) remained to the HSC. When specific ethnic groups were considered though (table 2.5), some much larger differences became apparent. It was only the Australian category which exhibited gender equality in participation at the HSC level, while in all other categories (except Maltese), females remained to the HSC at higher rates than did males, most notably in the Greek, Italian and Lebanese categories where females 'out-participated' males by up to 28 %. It is also evident from table 2.5 that in all categories except Lebanese, females performed better than did males at the HSC level.

School variables such as the rurality, the type of school system, and whether the school was located in a lower or upper class area have also been investigated in relation to retention rates. Although the differences found were generally not great, Rosier (1978), Ainley et al. (1984), Williams (1987) and Miller and Volker (1989) all found that urban schools tended to have greater retention rates than rural schools. However, it was not true that *all* urban schools had greater retention rates than rural schools. A number of factors were identified by the Commonwealth Schools Commission (1975, p. 75–79) for causing the trend of lower retention rates in rural schools, namely, that schools in rural areas were more isolated from facilities such as libraries and television, had a high rate of teacher turnover, and had high proportions of young inexperienced teachers.

Table 2.5: Gender: performance in and retention to HSC.

Parents Country of Birth	Sex	HSC performance			Percentage remained to HSC
		Low HSC (0–211)	Medium HSC (212–297)	High HSC (298–489)	
		per cent distribution			
Both Australian	Male	33	37	30	30
	Female	23	40	37	30
Both Greek	Male	56	44	0	45
	Female	42	32	27	60
Both Italian	Male	50	14	36	22
	Female	24	40	36	50
Both Lebanese	Male	35	50	15	20
	Female	56	28	15	39
Both Maltese	Male	0	50	50	10
	Female	0	0	100	6
Both Yugoslav	Male	66	34	0	41
	Female	44	35	21	48

Adapted from: Meade (1983).

For different types of school system, the differences in retention were very much larger than for the rurality of a school. Rosier (1978) used two classifications for school system, namely, government and non-government, the non-government category comprising of independent and Catholic school types. His data indicated that non-government schools had around a quarter greater retention than did government schools. Using government, Catholic and independent school categories, Williams (1987) found that students of Catholic schools were 15 % more likely to complete Year 12 than those of government schools, while those of independent schools were around 56 % more likely to complete Year 12 compared to those of government schools and 41 % when compared to those of Catholic schools. Similar findings were also made by Miller & Volker (1989). They found that those from Catholic schools were 20 % more likely to graduate from high school than those who attended a government school, whilst the corresponding figure for those who attended an independent school was 38 %. Miller & Volker suggested that these differences may be due, at least in part, to '... the competitive screening process associated with entry into some non-government

schools (p. 54).'

In determining why these substantial differences occur between school systems, one has to ask are the differences due principally to the type of school system alone or to other implicit variables? As high socio-economic status families were over-represented in non-government schools, one possibility would be that the between system differences were due mainly to the socio-economic background of students. Williams (1987) tested this hypothesis by controlling for socio-economic variables. Although between system differences were reduced, they remained. Thus the socio-economic composition of the student bodies in school systems cannot be given as the sole reason for between system differences in Year 12 completion. The possibility of non-government schools promoting a higher level of achievement was also investigated by Williams (1987). With both socio-economic variables and achievement controlled for he found a further reduction in between school differences. This finding supports the argument that non-government schools promote a higher level of achievement. However, substantial differences still remained in Year 12 completion rates between different school systems.

With regard to family size, Miller and Volker (1989) found a strong relationship of the larger the family, the less likely children in this family were to complete their secondary schooling. However, Miller and Volker claimed that this finding was not in general agreement with earlier studies.

2.2 Aspirations for and Entry to Tertiary Education

As tertiary education is not compulsory, aspirations towards tertiary education play a significant role in whether or not an individual will participate in it. A number of studies have been carried out to determine the aspirations of senior secondary school students towards tertiary education. Among the possible determinants of students' aspirations for tertiary study, gender, parent's occupation, parent's education level and ethnic background were among the most common variables investigated. A number of studies from the late 1960's onwards including those by Taft et al. (1971), Taft (1975b), Meade (1984) and Harvey-Beavis & Elsworth (1986), consistently showed that a greater percentage of students from non-English speaking backgrounds, in general, aspired to tertiary education when compared with Australian born students or other

English speaking background students.

Taft et al. (1971) examined the attitudes of a sample of senior secondary male Victorian students towards tertiary education. Students were placed into 'national groups' according to their parent's region of birth. Results indicated a marked variation in both educational aspirations for and success in gaining entry to tertiary education. Among those of the sample who intended going on to full-time tertiary study, all national groups preferred university over a college of advanced education or teachers' college. The only exception to this were students with both parents Greek, where the preference for a college of advanced education outweighed the preference for university by 3 %. Males with both parents originating in Eastern Europe were the second most likely group to prefer a college of advanced education, after those from Greek families. A partial explanation for why a higher proportion from Greek and Eastern European families preferred a college of advanced education compared to other groups was given by Taft et al. (1971), namely, that a high proportion from these families attended technical high schools. As such, these students would not be considered for entrance to university unless they transferred to a high school to complete their matriculation. This factor alone would not, however, fully explain the different preferences between groups for a college of advanced education.

Of those male students who were in sixth form (matriculation), those with parents both Asian, both Eastern European or both Polish had the highest proportion of preferences for university at 95 %, 85 % and 84 % respectively (table 2.6). On the other hand, males with parents both Greek, or both originating from Northern or Western Europe, had the lowest preferences for university at 60 % and 49 % respectively.

When one considers the percentages of those who actually succeeded in entering university (table 2.6), it is clear that a significant number of students from all national groups failed to fulfill their aspirations for university entry. The differences in success between national groups varied considerably. Of the national groups identified in the study, male students with Polish parents not only had very high aspirations for university (84 %) but were also the most successful group in achieving this aspiration with a reported 84 % success rate. Those with one 'English speaking' (excluding Australian) and one 'non-English speaking' parent, or both Greek parents, were the next groups to be most successful in achieving their aspiration for full-time university education (80 % and 78 % respectively). It is interesting to note that two of the three national groups

Table 2.6: Planned tertiary education and success in entering it.

Parents Region of Birth	Percentage of eligable population who planned to attend university or college of advanced education in 1968		Percentage of those who planned full-time uni. education and succeded (6^{th} Form students)*
	University (% of 6^{th} Form students)	C.A.E. (% of 5^{th} & 6^{th} Form students)	
Both Australian	64	9	64
One Australian, one Other	72	9	65
Both Other English speaking	72	9	73
One English speaking, other non-English speaking	71	0	80
Both Northern or Western Europe	49	7	29
Both Polish	84	14	84
Both Eastern Europe	85	23	60
One Northern or Western Europe, one Eastern Europe	81	10	33
Both Italian	73	11	56
Both Greek	60	29	78
Both Asian **	95	3	48

Adapted from : Taft et al. (1971).

* These figures should be taken as rough indicators only due to small sample numbers.

** This group consisted almost entirely of foreign students.

identified as having the lowest success rates in achieving their aspiration to enter university, were among the groups with the highest level of aspirations. The two groups were males with Asian parents (95 % aspired to university, 48 % succeeded), and those with one parent of Northern or Western European origin and one from Eastern Europe (81 % aspired to university, 33 % succeeded).

Two subsequent studies of educational and occupational aspirations were conducted by Taft which, unlike the above study, included females. The first of these studies examined 754 female and 592 male students who planned to leave school at the end of the year, while the second was based on a sample of year 8 students and biased towards working class and immigrant students. All three studies (Taft et al. 1971, Taft 1975b) yielded consistent results over the six year period in which they were conducted. In these studies the occupational status of families was also taken into account and compared with the aspirations of the students. It was found that aspirations for higher education correlated much more strongly with occupational status in the case of students with parents from English speaking countries than in the case of students from non-English speaking backgrounds. This points to the level of aspiration being a function of cultural background more so than a function of occupational status.

Meade (1983, 1984) provided more recent data on the aspirations of high school students towards tertiary education. A number of differences are to be found between Meade's results and those of Taft et al. (1971). These differences were most probably due to Meade's sample comprising of grade nine students whereas the survey conducted by Taft et al. had a sample consisting of senior secondary school students. Despite this fundamental difference, Meade's results agreed with the results of Taft et al. (1971) and Taft (1975b) in that students from non-English speaking backgrounds aspired to tertiary education more so than those with parents born in Australia or other English speaking countries. For both groups of students with either both parents born in non-English speaking countries, or, one parent born in an English speaking country and one in a non-English speaking country, 42 % aspired to university or a college of advanced education compared with 32 % for those with both parents born in Australia, and 33 % for those with parents born in another or different English speaking countries.

When the data were split up by specific ethnic groups and to show levels of aspiration for a college of advanced education and university separately (table 2.7), the following observations can be made. Firstly, for all groups, there was a preference for

university over a college of advanced education. This was most marked for students

Table 2.7: Grade 9 students' aspirations for tertiary education by socio-economic status and parental aspiration for child to attend university.

Parents Country of Birth	Socio-economic status and institution aspired to						Parental aspiration for child to attend UNI
	High SES		Low SES		Total		
	CAE[1]	UNI[2]	CAE	UNI	CAE	UNI	
	percentage distribution						
Both Australian	17	23	12	14	14	18	20
Both Greek	13	25	16	34	15	33	52
Both Italian	29	29	3	25	8	26	27
Both Lebanese	17	33	15	24	15	25	36
Both Maltese	..	100[3]	12	8	11	14	9
Both Yugoslav	13	25	10	34	10	33	38

Adapted from : Meade (1983, p. 94).

[1] College of Advanced Education

[2] University

[3] Cell frequency less than five.

with both parents Yugoslav who had a 23 % greater aspiration level for university than for a college of advanced education. Those with parents both Greek or both Italian were the next two groups to aspire more to university than to a college of advanced education by 18 % each.

Socio-economic status was also taken into account by Meade (1983) when looking at the aspirations of students. It was found that for both English speaking (including Australian) and non-English speaking background students, those in the higher socio-economic status category had higher aspirations for tertiary study than those in the lower socio-economic status category. This was the case regardless of whether a college of advanced education or university was aspired to, that is, a higher proportion of those from a high socio-economic status background aspired to a college of advanced education, or university, than those from a low socio-economic status background. However, this was not always the case when specific non-English speaking groups were considered. The most notable exception were those with both parents Greek where the proportion from a lower socio-economic status background outweighed the proportion from a higher socio-economic status background by 3 % and 9 % in aspiration for a

college of advanced education and university respectively (table 2.7). The proportion of those from a lower socio-economic status background with both parents Yugoslav outweighed the proportion from a higher socio-economic background in aspiration by 9 %, although this figure related to university only.

Later research on the outcomes of 822 final year high school students in 1984 or 1985 by Prior and Beggs (1989) found that those of non-English speaking background were more likely to proceed to tertiary education than the children of English speakers. The strongest and most consistent finding was the significance of the mother's educational qualifications in the child's decision to proceed to further education. Fathers' educational levels, however, proved to be insignificant with regard to the childrens' probability of entering tertiary education. The greater influence of the mother's educational level than the father's educational level was also found by Miller and Volker (1989) in their study of factors influencing retention at high school (see section 2.1). In agreement with earlier research, Prior and Beggs (1989) also found that those with a father in a blue-collar occupation were significantly less likely to proceed to tertiary education and that those who attended an independent (non-Catholic) school were more likely to proceed to tertiary education.

A study of the transition of 1534 Victorian and 372 Western Australian final year secondary students by Beswick et al. (1983) yielded results generally supporting those of other studies. They found that those with more highly educated parents or with a parent in a high status occupation were significantly more likely to proceed to tertiary education. Although it was found that the parental income of those who proceeded to tertiary education was higher than for those in the non-transition group, no significant differences were found. Beswick et al. (1983, p. 78) suggested that 'other aspects of socio-economic status, especially occupation and education, are more important influences on transition than is income.' One of the most significant findings was for the Victorian sample where it was found that those from independent (non-Catholic) schools were much more likely to proceed to tertiary education whilst those from state schools or technical and further education colleges were more likely to be in the non-transition group. Of those who attended an independent school, only 10 % did not proceed to tertiary education compared with around a quarter of those from each of state schools, Catholic schools or technical and further education colleges.

Meade (1983) investigated other factors apart from ethnicity or socio-economic fac-

tors alone which could have had an effect on the formation of students' aspirations. The parental aspirations for the students studied to attend a college of advanced education or university were investigated to compare these aspirations with those of the students themselves. Parents of students who had both parents born in Australia, or both in 'another or different English speaking countries', had the lowest aspirations for their child to go on to a college of advanced education or university at 25 % and 39 % respectively. For the 'both non-English speaking' category, the corresponding figure was somewhat higher at 44 %. The highest parental aspirations, 50 %, were, however, for parents with students who had one parent born in an English speaking country and one in a non-English speaking country. When specific non-English speaking countries were considered, it can be seen from table 2.7 that the rank order of level of aspiration for university by the student followed, almost exactly, the rank order for the level of aspiration that parents had for their child to attend university. One common trend which was revealed by the comparison of parental aspirations and student aspirations was that the proportion of students who aspired to university was generally lower than the proportion of parents who aspired for their child to attend university. The only exception to this trend identified was for students with both parents Maltese.

Another study of parental aspirations for their childrens' educational attainment was conducted by Marjoribanks (1980) who asked the parents of his sample of 11-year-old children 'How much education would you really like your child to receive if at all possible ?' In response, over 70 % of Greek parents and about 46 % of Southern Italian parents indicated that they would like their child to to receive a university degree. The corresponding figures for the Anglo-Australian middle social status and Yugoslavian families were 40 % and 36 % while only 30 % and 24 % of the English and lower status Anglo-Australian parents expressed similar educational aspirations respectively. Conversely, the percentages of parents who indicated that they expected their child to either 'leave school as soon as possible' or 'finish high school' were in descending order: Anglo-Australian lower status 51 %, English 44 %, Yugoslavian 41 %, Anglo-Australian middle social status 25 %, Southern Italian 15 %, and Greek 12 %. Greek and Southern Italian families thus clearly emerged from Marjoribank's research as having the highest aspirations for tertiary education. The main difference between these findings and the findings of Meade (1983) (table 2.7) was that Meade found Yugoslavian parents to have higher aspirations for their children to go on to university

than did Italian parents. However, as Marjoribanks cautioned, his Yugoslavian findings were based on a relatively small sample. Further, Marjoribank's Italian sample was specifically Southern Italian, unlike Meade's.

Taft et al. (1971), in his study of male senior secondary students, looked at a number of possible determinants of students' future study plans. Students were asked to rate the level of importance or influence that these factors had in determining their future plans. The 'student's own personal preference' was considered as the most important factor, with 'success at relevant subjects' and 'security of occupation students had in mind' also being commonly considered as very important factors in the determination of future study plans. Parental influence was commonly rated as being of 'some influence', especially for those with both parents Greek. This group of students also rated 'financial considerations' as of more importance than did those with parents born in other countries. 'Friends' influence', 'information from careers nights' and 'teachers' influence' were all rated as having 'little importance' by all national groups.

Beswick et al. (1983) in their study of the transition of final year Victorian and Western Australian secondary students, investigated the influence of a number of affective or attitudinal factors. Analysis of students' responses to the question 'Do your parents want you to undertake tertiary education ?' revealed that, for the Victorian sample, significantly more of those who proceeded to full-time tertiary education felt positive parental encouragement to undertake tertiary education (97 %) than of those who proceeded to part-time tertiary education (83 %), deferred tertiary study (78 %), or did not enrole in tertiary study at all (68 %). The non-transition group had the largest proportion, 21 %, claiming to have experienced negative parental encouragement to undertake tertiary education. Similar trends were also found for the Western Australian sample. A multiple regression analysis for predicting transition revealed positive parent encouragement to be the most powerful predictor of transition to full-time tertiary education for both the Victorian and Western Australian samples. Beswick et al. (1983) found further that males were significantly more likely to have felt positive parent encouragement than females.

Teacher encouragement was also investigated by Beswick et al. (1983) through the analysis of responses to the question 'Do your teachers encourage you to undertake tertiary study ?' The pattern of responses here followed closely the pattern of responses

in relation to perceived parent encouragement except that no significant sex difference was found. Of the Victorian sample, 82 % of those who proceeded to full-time tertiary education felt positive teacher encouragement compared with only 57 % of the non-transition group. Beswick et al. found further that those who attended an independent (non-Catholic) school generally perceived more teacher encouragement to undertake tertiary education than did respondents from other school systems. Students were also asked 'Are most of your friends going on to tertiary education ?' For the Victorian sample, a significantly greater proportion of those who proceeded to full-time tertiary education (84 %) expected their friends to be going on to tertiary education than of the non-transition group (69 %).

2.3 Participation in Higher Education

2.3.1 Ethnicity and Participation in Higher Education

The criteria used in identifying those from non-English speaking backgrounds has varied somewhat from study to study in the investigation of participation in tertiary education. For example, when using linguistic background to determine non-English speaking background status 'first language spoken' is sometimes used, or, whether the language(s) spoken at home are 'English only', 'English plus Other' or 'Other only'. Rarely has participation in higher education been related to specific linguistic backgrounds of students. A more commonly used criteria for determining the non-English speaking background status of students is the birthplace of their parents or of the students themselves. In some studies the birthplace of both parents are taken into account whereas in others, the birthplace of only one parent may be considered. Even where two studies may both consider the father's country of birth, say, differences still occur in how the data were categorised. One study might classify the father's country of birth merely as an 'English speaking country' or 'non-English speaking country', whereas another will consider specific countries of birth. Another major drawback in research looking at participation in higher education is that it is mostly restricted to examining first year intake populations rather than examining populations which contain later year students as well.

Despite this and the varying ways of classifying non-English speaking background persons, most research into participation at higher education level has shown that,

across the board, those from non-English speaking backgrounds are not under-represented in higher education.

The following review of previous research on ethnicity and participation in higher education is in two main sections, the first deals with research that has classified a student's ethnicity in terms of parental birthplace or linguistic background whilst the second section deals with research that has specifically used students' birthplaces as a measure of ethnicity.

Parental Birthplace/Linguistic Background and Participation in Higher Education

Anderson et al. (1978) in their study of all students beginning undergraduate degrees in Australian higher education institutions in 1976, found that overall, students with an overseas born father or mother participated in higher education at a higher rate than students with Australian born parents. It was found that students of migrant origin were over-represented, in comparison to their representation in the corresponding age group, in universities and metropolitan colleges. This was the case not only for students with parents born in the non-English speaking countries but also for those with English speaking country born migrant parents.

In a survey of 1982 newly enrolling tertiary students in South Australia[5], it was found that approximately one quarter of the university students surveyed were of non-English speaking background, that is, either they themselves or at least one of their parents were born in a non-English speaking country. This approximated to the estimate of the proportion of non-English speaking background people in the general population. Two years later, Power et al. (1985) in their study of potential university or college of advanced education students in South Australia in 1984, used not only father's birthplace as an indicator of ethnicity but also the languages spoken by parents at home. Students with fathers born in primarily non-English speaking countries were, as a group, found to be over-represented in universities and colleges of advanced education compared to the corresponding proportion in the South Australian population. The most significant over-representation was, however, revealed by the 'language

[5]Survey conducted by the Centre for Applied Social and Survey Research at Flinders University and the S.A. Group of Chief Executives of Tertiary Institutions, mentioned in Report of the Task Force to Investigate Multiculturalism and Education, *Education for a Cultural Democracy,* (South Australia), June, 1984, pp. 176–7.

spoken at home by parents' ethnicity indicator. As table 2.8 below indicates, those with parents who spoke only a language other than English at home were substantially over-represented. Those with parents who spoke both English and another language were, although not to the same degree, over-represented, while those who spoke En-

Table 2.8: Language spoken at home, first year 1985 higher education students vs SA population.

Ethnicity Indicator	(a) Enrolled %	(b) Population* %	RPR a/b
Language Spoken at Home			
English only	80	83	0.90
English + other	17	16	1.06
Other only	3	1	3.00

* ABS Catalogue No. 4503.0 December 1983 (Males 35–54 years vs father's birthplace).

Source : Power et al. (1985, p. 43).

glish only were under-represented in universities and colleges of advanced education together in South Australia.

The only national study including the investigation of non-English speaking background student participation in higher education was carried out by the Australian Council for Educational Research (Williams, 1987). In this study it was found that youth of fathers born in non-English speaking countries were participating in tertiary education at an above average rate and were showing a marked preference for university education (table 2.9). When the question of "Ethnic disadvantage ?" was tackled by Williams (1987), he responded with an 'unequivical 'No' '. However, as Williams noted, the bulk of the English speaking category of his sample was made up of those of British origin while those of Greek or Italian origin made up the main bulk of those in the non-English speaking category in his data. Thus a response of 'No' cannot be given to the question of ethnic disadvantage with respect to other national groups such as Turkish or Lebanese. Indeed, as will be seen later, other studies have shown these groups to be under-represented in higher education. Nevertheless, Williams (1987) being aware of this, still claimed that his data established that 'the majority of persons from non-English speaking backgrounds are not disadvantaged with respect to participation in education' (p. 73).

In the investigation of participation of specific national groups in higher education,

Table 2.9: Higher education participation by ethnicity.

Sample age	Father's Country of Birth: Australian born	Born in an English speaking country	Born in a non-English speaking country
	Per cent ever in higher education: all persons		
22 in 1983	24	28	33
19 in 1984	17	16	25
	Ever in higher education: Year 12 graduates		
22 in 1983	57	61	64
19 in 1984	48	49	50
	Ever in University		
22 in 1983	12	13	19
19 in 1984	8	8	17
	Ever in College of Advanced Education		
22 in 1983	16	19	19
19 in 1984	10	9	8

Source : Williams, 1987 (ACER Youth in Transition Longitudinal Study).

data are available from the University of Melbourne's and Monash University's new student intake surveys. The specific national background of students entering South Australian higher education institutions in 1985 is also available from the study conducted by Power et al. (1985). These studies allow one to get an indication of those specific national groups which were *under-represented* in higher education and which otherwise would not be identified within the *over-represented* non-English speaking group as a whole.

The University of Melbourne has recorded precise details of the national background of its annual intakes of first year students since 1970. Unlike most other research, the mother's country of birth was used as the criterion for national background. The reason why this was used rather than the father's country of birth was due to the argument put forth by Price and Pyne (1976). They argued that 'it is the culture and language of the mother rather than of the father which on the whole determine the cultural and linguistic habits of the family' (Sturman, 1985, p. 59). Table 2.10 of the mother's birthplace of University of Melbourne's first year intake students from 1970 to 1980 is taken from Anderson and Vervoorn (1983, p. 110) where they also compared the 1976 intake data with estimates made by Price and Pyne (1976) of the national background

distribution of the 15 to 19 year age group of the Victorian population in 1976. As Anderson and Vervoorn emphasise, the estimates made by Price and Pyne were based on *linguistic* affiliation rather than on *national* affiliation.

The data of the intake surveys of The University of Melbourne revealed some increases and decreases in proportions of students from various national backgrounds entering the University over the years. Between 1970 and 1978 the percentage of students with Australian born mothers decreased by about 7 %. This was probably due to the impact of Australian born children of parents who migrated during the period of large migration in the 1950's entering universities. The ethnic groups which increased most of all in participation from 1970 were the Asians, Italians, Greeks and Yugoslavs. The main ethnic group to have decreased in participation were the Polish, from 3.4 % in 1970 to 1.4 % in 1980. Although the high participation of Asians could be attributed mainly to their presence as 'overseas students', their increase in participation from 1.1 % in 1970 to 8.6 % in 1978 was considered by Anderson and Vervoorn to be due, in part at least, to the increased immigration of Asians to Australia. It should be remembered that the above mentioned increases and decreases related to proportions within the University of Melbourne's intake population, not to the degree of over or under-representation with relation to the Victorian population as a whole. It is possible for a particular group to increase its proportion within the University of Melbourne population but at the same time, become more under-represented with respect to the community at large.

The fact that Italians, Greeks and Yugoslavs increased their proportions and Polish decreased, could be explained primarily by demographic factors. That is, migration from Italy, Greece and Yugoslavia was a relatively recent event and thus the children of these migrants were more likely to be of an age to commence tertiary education than for the children of other migrant groups. Conversely, emigration from Poland to Australia had been of small volume since the immediate post-war years resulting in a decline of tertiary student age Poles over the period 1970 to 1978.

An indication of the over or under-representation of national groups is given by the comparison of the 1976 intake figures with the estimates made by Price and Pyne (1976) of the proportions of various ethnic group 15 to 19 year olds in the Victorian population (table 2.10). This exercise revealed that the ethnic groups most under-represented were those from English speaking backgrounds (including Australia), Holland, Italy,

Table 2.10: National origins of new undergraduate students at the University of Melbourne, 1970–80, according to mother's country of birth (percentages)

Mother's country of birth	1970 N = 2630	1972 N = 2841	1974 N = 2526	1975 N = 2596	1976 N = 2832	1978 N = 2531	1980 N = 2408	Proportion of Victoria 5–19 population, 1976
Australia	72.9	70.5	71.7	65.7	65.9	65.8	65.0	}
Other English speaking	8.6	8.8	9.8	9.3	9.0	9.5	8.9	} 78.3
Germany, Austria	2.2	2.3	2.7	2.2	2.0	2.2	1.9	1.5
Holland	1.2	1.2	1.0	1.1	1.1	1.0	1.1	1.7
Scandinavia	0.1	0.1	0.2	0.2	0.0	0.1	0.1	0.1
France, Belgium	0.3	0.3	0.4	0.5	0.5	0.1	0.3	0.2
Switzerland	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0
Italy	2.6	2.7	2.3	4.3	3.7	5.0	4.6	5.7
Spain, Portugal	0.1	0.1	0.1	0.0	0.2	0.4	0.1	0.3
Latvia, Lithuania	0.7	0.4	0.3	0.6	0.6	0.4	0.3	0.2
Estonia, Finland	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Poland	3.4	2.9	2.3	1.8	2.2	1.7	1.4	0.8
Czechoslovakia	0.3	0.4	0.4	0.3	0.3	0.5	0.3	0.2
Hungary	0.6	0.7	0.5	0.5	0.5	0.4	0.3	0.3
Romania	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Russia	0.6	0.6	0.5	0.8	0.6	0.7	0.5	0.2
Yugoslavia, Bulgaria, Albania	0.4	0.6	0.5	0.8	0.5	1.2	1.2	2.1
Greece, Cyprus	1.0	1.2	1.5	2.2	2.2	4.3	3.9	3.1
Malta	0.1	0.2	0.2	0.6	0.5	0.4	0.4	1.7
Turkey	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
Lebanon, Syria	–	–	–	–	0.0	–	–	0.5
Asia	3.4	5.6	4.2	7.2	8.8	5.1	8.6	1.9
Other	1.1	1.4	1.1	1.4	1.0	1.0	0.0	0.7
All countries	99.9	100.3	100.0	99.8	100.0	100.1	100.1	100.0
No information N =	298	66	441	304	202	780	449	–
Total enrolment N =	2928	2907	2967	2900	3034	3188	2980	–

Note: Percentages have been calculated only on the number of usable returns. The proportions of students giving 'no information' ranged from 2.3% in 1972 to an exceptionally high 24.3% in 1978.

Taken from Anderson and Vervoorn (1983, p.110)

Yugoslavia, Greece, Malta, Turkey and Lebanon. On the other hand, those groups significantly over-represented were Germany, France, Latvia and Lithuania, Czechoslovakia, Hungary, Russia and Asia. Again, it is not clear from the data whether the Asian over-representation was due primarily to the presence of Asian overseas students or not.

Other student intake data showing specific national groups was also available for Monash University. Table 2.11 gives the national background of new entrants to Monash University during the period 1970 to 1982. On comparing these data with those for the University of Melbourne, it can be seen that these data are much the same with both sets of 1976 data agreeing with which groups were under or over-represented when compared with Price and Pyne's (1976) estimates of the relevant proportion of national groups in the Victorian population.

Much more recent information on representation of ethnic groups in higher education is available from the study of access to higher education in South Australia conducted by Power et al. (1985). Here, the percentages of specific national groups (determined by the birthplace of the student's father), as a proportion of all those first year students enrolled in South Australian universities or colleges of advanced education in 1985 were calculated and compared with the corresponding percentages of 35 to 54 year old males in the South Australian population by birthplace (table 2.12). Students from German, Italian, Yugoslavian and Middle Eastern backgrounds were found to be the most under-represented whilst those of Greek and Asian backgrounds were the most over-represented. Those with fathers born in Australia, United Kingdom, Ireland or New Zealand, were found to be slightly under-represented. The most under-represented group by far found by Power et al. were the Aboriginals ((% enrolled)/(% population) = 0.07). According to Holton and Salagaras (1988), 1986 data on first year students from Monash University revealed a similar picture, namely, students from Greek and Chinese backgrounds were over-represented whilst those of Italian, Yugoslav and Middle Eastern backgrounds were under-represented.

Comparing the 1976 data from Monash and Melbourne Universities with the 1985 data of Power et al. (1985) and the 1986 entry data of Monash University, most ethnic groups under or over-represented in the 1976 data appeared to be in a similar position in the 1985/86 data. The most significant exception is for those of Greek background where the data suggested that they had come from being under-represented

Table 2.11: National origins of new undergraduate students, Monash University, 1970–82, according to mother's country of birth (percentages)

Mother's country of birth	1970 N = 2199	1971 N = 2089	1972 N = 2451	1973 N = 2407	1974 N = 2885	1975 N = 2609	1976 N = 2576	1980 N = 2394	1982 N = 2374
Australia	70.8	69.8	67.8	69.1	69.0	69.5	64.3	58.3	53.3
Asia	3.7	5.6	7.5	4.5	4.3	4.0	6.7	8.2	14.2
Germany	1.8	1.9	2.2	1.7	1.5	2.1	2.1	1.9	1.4
Greece	0.5	0.8	1.2	1.2	1.3	1.5	2.6	5.8	5.4
Holland	1.3	1.5	1.1	1.5	1.0	1.4	0.9	1.0	0.9
Italy	1.3	1.9	1.7	2.1	2.3	2.1	2.7	3.4	3.4
United Kingdom	8.7	7.7	8.7	8.1	9.1	8.8	9.9	8.9	8.6
Yugoslavia	0.5	0.4	0.4	0.7	0.5	0.6	0.6	1.4	1.5
Other European	}	}	7.2	7.7	6.1	5.5	6.1	6.3	5.5
Other[a]	} 11.4	} 10.6	2.4	3.5	4.8	4.4	4.2	4.9	5.7
All countries	100.0	100.0	100.1	99.9	99.9	99.9	100.1	100.1	99.9

[a] Includes 'no response' category (approximately 1 %) for 1973–6.

Taken from Anderson and Vervoorn (1983, p. 113)

Table 2.12: Father's birthplace, first year 1985 higher education students vs SA population.

Ethnicity Indicator	(a) Enrolled %	(b) Population* %	RPR a/b
Fathers' Birthplace			
Australia	58.3	60.7	0.96
UK Ireland NZ	17.0	17.6	0.96
Germany	1.9	2.4	0.79
Greece	3.8	2.8	1.36
Italy	4.1	5.9	0.69
Netherlands	1.4	1.5	0.93
Yugoslavia	1.2	1.8	0.67
Other Europe	4.6	3.5	1.33
Middle East	0.7	1.6	0.45
Asia	6.7	1.6	2.94
North America	0.5	0.5	1.08
Other	1.8	0.5	4.00

* ABS Catalogue No. 4503.0 December 1983 (Males 35–54 years vs father's birthplace).

Source : Power et al., 1985, p. 43.

to being over-represented in higher education. It should be remembered, however, that the above data relates to only two universities in Victoria, and, higher education institutions in South Australia. Thus it is doubtful as to whether or not the above findings could be extrapolated to higher education in Australia as a whole.

Differences in participation between national groups in higher education occurred not only between the different types of higher education institution, for example, college of advanced education or university, but also according to the faculty of study. Anderson et al. (1978) found that for their universities sample, the faculties of Education, Law and Medicine had the highest proportions of students with fathers born in Australia. In contrast to this, the faculties of Education, Law and Engineering had the lowest proportion of those with fathers born in the United Kingdom, Eireland or New Zealand. The faculties of Commerce and Engineering had the greatest proportion of students with fathers born in Asia compared with other faculties, while those with European born parents were least represented in Medicine and most represented in the Arts faculty.

Student's Birthplace and Participation in Higher Education

This section deals with participation in higher education with specific consideration to students' countries of birth. This type of analysis has been much less used in the research than the use of parental birthplace or linguistic background. A different perception of under or over-representation in higher education for various ethnic groups in higher education occurs when the birthplace of the student is considered rather than that of parents.

In contrast to the above research which showed that, overall, those with a *parent* born in a non-English speaking country (the student being born either overseas or in Australia) are not under-represented in higher education, some researchers using specifically students' birthplaces have concluded that *students* born in non-English speaking countries are under-represented in higher education. Two such reports are the 'Higher Education Series' report on ethnicity[6] and a report edited by Rubichi (1991) which made use of data in the 'Higher Education Series' report.

The 'Higher Education Series' report was based on 1990 data from the Department of Employment, Education and Training's collection of higher education student statistics which included information on ethnicity such as students' country of birth, home language and year of arrival. A major factor is that these data excluded overseas students. As the vast majority of overseas students were Asian and thus considered non-English speaking, the exclusion or inclusion of these students would alter the perceived under or over-representation of non-English speaking students in higher education. This point will be examined in greater detail later.

Using data from the Higher Education Series report (see table 2.13), Rubichi (1991, p. 10–11) put forth the following argument and conclusion:

> Thus 80.43 % of students in higher education were Australian-born, whereas only 72.54 % of the 17 – 64 year old population in Australia were Australian-born. In contrast, 11.23 % of students in higher education were born overseas in a non-English speaking country but 16.04 % of the 17 – 64 year old Australian population were born overseas in a non-English speaking country. From such comparisons, it is evident that students born in non-English speaking countries are by no means over-represented in higher education, when compared with the proportion of such people in the general population.

[6] *Ethnicity*, Higher Education Series report no. 11, Department of Employment, Education and Training, April 1991.

Table 2.13: Australian higher education students by country of birth, some key statistics, 1990 (a).

Country of birth	Number of students	Prop^n of total students (%)	Prop^n of students who are (%) female	aged under 25	Prop^n in pop^n (%) (b)
Australia	355695	80.43	54.5	65.2	72.54
ES countries (c)					
UK & Ireland	24985	5.65	53.0	37.3	8.46
New Zealand	5826	1.32	55.3	45.4	2.09
South Africa	2381	0.54	52.2	66.7	0.34
USA	2229	0.50	55.1	53.3	0.37
Canada	1457	0.33	55.3	60.2	0.172
Total ES countries	36878	8.34	53.5	42.4	11.42
NES countries (d)					
Vietnam	5432	1.23	37.3	71.5	0.86
Malaysia & Brunei	4899	1.11	46.7	63.3	0.57
Hong Kong & Macau	4248	0.96	44.9	64.8	0.40
Germany	2159	0.49	55.5	38.5	0.91
Yugoslavia	1440	0.33	50.8	61.2	1.33
Netherlands	1274	0.29	51.3	26.5	0.71
Italy	1241	0.28	50.4	36.3	1.93
Lebanon	974	0.22	35.7	70.8	0.57
Greece	927	0.21	47.9	51.6	1.18
Other NES countries	27063	6.12	48.6	56.4	7.57
Total NES countries	49657	11.23	47.1	57.7	16.04
TOTAL	442230	100.00	53.6	62.4	100.00

Source: Department of Employment, Education and Training, *Higher Education Series* Report No. 11, 'Ethnicity', April 1991.

(a) Countries listed separately in this table have either significant student numbers or represent a significant proportion of the population.

(b) Persons born in each country as a proportion of the 17 – 64 year old population in Australia, 1990.

(c) Major English speaking countries as defined by the ABS.

(d) Non-English speaking countries — all countries other than ES countries.

Those born in English speaking countries other than Australia were also found to be under-represented in higher education with these students making up 8.34 % of the total student population but comprising 11.42 % of the 17 to 64 year old Australian population.

Looking at individual countries of birth, those found to be over-represented among higher education students were those born in Malaysia, Brunei, Hong Kong, Macau and Canada whilst those found to be under-represented were those born in Yugoslavia, the Netherlands, Italy, Lebanon and Greece. It must be remembered that these conclusions are reached by comparing proportions of students to the relative proportion in the 17 – 64 year old population. However, when one considers that the majority of higher education students are aged under 30 and that migrant groups have a different age structure to the general Australian population (see table 2.14), such comparisons are too simple and may be an unrealistic guide to the over or under-representation of particular groups of students in higher education.

Unlike the report by (Rubichi, 1991), some consideration to general student age and ethnic age structures in Australia was given in the Higher Education Series 'Ethnicity' report. As is indicated in table 2.14, with respect to age, students aged under 25 years were substantially over-represented whilst those aged over 25 were substantially under-represented in comparison with the 17 to 64 year old population. In considering the data in table 2.14, it was stated in the 'Ethnicity' report that:

> A somewhat different picture emerges when participation by age group is considered. In particular, the participation of persons born in non-English speaking countries exceeded that of persons born in both Australian and English speaking countries for all age groups except the oldest (aged 30 and over). Given other evidence that Australians born in non-English speaking countries are, overall, more highly qualified than the rest of the Australian population, the low participation rates among older persons in this group may be due to their having obtained higher education qualifications before migrating to Australia.

The findings of Miller (1984) support this viewpoint. In an Australian study of 3166 males aged between 30 and 69 years (of which 408 (13 %)) had undertaken post-secondary education) Miller (1984) found that those born overseas in a non-English speaking country were the most likely to have undertaken full-time post-secondary education with a participation rate of 17.5 %. The participation rates of those born in Australia and of those born in an overseas English speaking country were 11.1 % and

Table 2.14: Australian higher education participation rates, by country of birth, age and sex, 1990 (per '000 of relevant population cohort) (A)

Country of birth	19 and under (b)	20–24	30 and over (c)	Total (d)	
Males					
Australia	120	100	36	15	41
ES country	127	81	34	14	26
NES country	145	136	46	11	29
All males	122	102	37	14	37
Females					
Australia	166	112	38	20	49
ES country	151	81	34	21	33
NES country	162	122	32	11	28
All males	165	110	36	19	44
Persons					
Australia	142	106	37	18	45
ES country	138	81	34	18	30
NES country	153	129	39	11	28
All males	143	106	37	17	41

Source: Department of Employment, Education and Training, *Higher Education Series* Report No. 11, 'Ethnicity', April 1991.

(a) These participation rates are not directly comparable to other DEET participation rates as this table excludes students where the country of birth is not known.

(b) Students aged 19 or less as a proportion of the 17–19 population.

(c) Students aged 30 or more as a proportion of the 30–64 population.

(d) All students as a proportion of the 17–64 population.

16.7 % respectively.

Thus if the findings in the 'Ethnicity' report are combined with the findings of Miller (1984), then the proportion of Australians born in non-English speaking countries who have participated in post-secondary education (regardless of whether undertaken in Australia or overseas) is higher than for either Australian born persons or Australians from English speaking countries. This being the case, it is difficult to view those Australians born in non-English speaking countries as truly under-represented in higher education.

Rubichi (1991) also considered the participation of non-English speaking country born persons specifically in South Australian higher education. Again using using data from the Higher Education Series 'Ethnicity' report, he stated that:

> Only 8.9 % of all students in South Australian higher education institutions in 1990 [excluding full fee paying overseas students] were born in a non-English speaking country. This is a significantly small number, when

> compared with the percentage of people born overseas in a non-English speaking country in the South Australian population, which was 10.3 % in 1986.

Again, no consideration was given to the fact that the proportion of non-English speaking country born students was compared to the corresponding proportion for the whole of the South Australian population, this population having a much different age structure compared with many ethnic groups. Nor does such a comparison take into account the fact that many older non-English speaking country born Australians would have gained a higher education qualification overseas (as was mentioned in the Higher Education Series 'Ethnicity' report).

More recent data on the proportion of non-English speaking country born persons in higher education in South Australia are available from an information bulletin entitled 'Ethnicity of University Students in South Australia 1991', published by the Office of Tertiary Education[7] With the exclusion of full fee paying overseas students, it was found that 10.2 % of higher education students were born overseas in a non-English speaking country, this figure being higher than the 8.9 % for 1990 and virtually the same as the proportion of South Australian residents born in a non-English speaking country as indicated by the 1986 Census, namely, 10.3 %. Unlike Rubichi (1991), the authors of the Office of Tertiary Education's report pointed out the limitations in determining under or over-representation of particular ethnic groups in higher education by comparing proportions in the student population with the corresponding proportions in the South Australian population as a whole:

> Where such comparisons are made they are based on the only full data set on ethnicity presently available, the 1986 Census. Consequently not all material on the 1991 student body is strictly comparable with the 1986 population of Australia as reported in the Census. Apart from the different reference dates, the age distribution of the student population is different from that for the population as a whole which may in turn mean that representation for persons born overseas and or speaking a language other than English in the home differs between these two populations for reasons not related to access and participation.[8]

An example of how data can be misleadingly reported due to the non-consideration of different age structures of ethnic populations compared with the general South Aus-

[7]Office of Tertiary Education, 1991, *Ethnicity of University Students in South Australia*, Information Bulletin No. 91/4.

[8]ibid. p. 2.

tralian population, appeared in the South Australian 'Advertiser' newspaper[9] in an article headed 'Vietnamese make impact at universities'. The article made use of information taken directly from the Office of Tertiary Education's report regarding the ethnicity of South Australian university students in 1991 (see table 2.15, second and third columns). Although the statistics quoted were correct, the interpretation of these data in the article gave an indication of severe over or under-representation for particular ethnic groups. For example:

> A study by the Office of Tertiary Education shows that SA's Vietnamese community leads the way.
>
> Its representation in the university student population is almost three times higher than its representation in the general community.
>
> ... Nations with a low representation include European countries such as Italy, Germany and Greece.

The great over-representation of the Vietnamese community in higher education was arrived at due to Vietnamese making up only 0.52 % of the total South Australian population but 1.41 % of the state's university students. Comparing the equivalent statistics for the Italians, Germans and Greeks makes these groups appear vastly under-represented.

When the age structure of the various ethnic communities are considered and compared with the age structure of the university student population, the perception of representation of certain groups changes. From the fifth column in table 2.15 it can be seen that the Vietnamese community was generally much younger than the general population and thus far closer age wise to that of the university student population with 58.1 % of its members being between 15 and 34 years of age compared with only 33.6 % of the general population. As the vast majority of the university student population is in the 15 to 34 year old age group (the Department of Employment, Education and Training's Annual Statistical Collection showed that just under three quarters of Australian higher education students in 1988 where aged 17 to 29 years), comparisons with this age range give a better indication of under or over-representation. The percentage of 15 to 34 year old Vietnamese in the 15 to 34 year old cohort of the South Australian population was 1.03 compared with 0.52 using total population statistics. Although this figure is still less than the 1.41 % representation in higher education

[9] *The Advertiser*, 'Vietnamese make impact at universities', 8^{th} of January, 1992.

Table 2.15: Proportions of nationalities in South Australian higher education, the whole South Australian population and 15–34 year old population.

Country of birth	Nationality as percentage of total university population[1]	Nationality as percentage of total State population (1986)[1]	15–34 year old cohort of birth group as percentage of State 15–34 year old population (1986)[2]	Percentage of birth group aged 15–34 (1986)[2]
Australia	77.03	76.49	79.4	35.1
UK & Ireland	7.75	10.62	10.68	33.0
Germany	0.63	1.09	0.58	18.2
Poland	0.46	0.59	0.30	15.5
Netherlands	0.36	0.76	0.45	19.0
Italy	0.35	2.20	1.00	14.1
Greece	0.22	1.00	0.53	17.1
Yugoslavia	0.19	0.65	0.43	19.4
Vietnam*	1.41	0.52	1.03	58.1
Lebanon	0.09	0.10	0.11	35.2

Note: This table uncludes full fee paying overseas students.

* No full fee paying overseas students for this group.

[1] Source: Office of Tertiary Education, *Ethnicity of University Students in South Australia 1991*, Information Bulletin No. 91/4 (Adelaide: OTE).

[2] Calculated from: Australian Bureau of Statistics, *Census 86 — Summary Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2483.0 (Canberra: Commonwealth Government Printer).

thus indicating over-representation, the over-representation is much less than if age structures had been ignored.

Similar analysis using the 15 to 34 year old age cohort (see table 2.15) for other ethnic groups considered gives a very different picture of representation than if total population figures were used. Although the perceived under-representation of those born in the Netherlands, Italy, Greece and Yugoslavia remains, the under-representation is substantially reduced. For those born in Germany or Poland, the perceived under-representation was actually reversed to over-representation when 15 to 34 year old cohorts were considered. For one group, those born in Australia, representation in higher education went from being over to under when only the 15 to 34 year old cohorts were considered.

Using 1990 Australian Bureau of Statistics data, Foster et al. (1991) also used younger age cohorts when examining participation in tertiary education, namely, 15 to 19 years of age and 20 to 24 years of age cohorts (table 2.16). Different perceptions of under or over-representation for various ethnic groups were found compared to the above analysis using 15 to 34 year old cohorts and 1986 Census data. Overall, Foster (1991, p. 66) found that:

> ... persons born in non-English speaking countries had a higher rate of participation in tertiary education for both the 15 to 19 years of age group (27.9 %) and the 20 to 24 years age group (39.1 %) than either persons born in English speaking countries (18.6 % and 16.7 % respectively) or persons born in Australia (23.3 % and 21.7 % respectively). This was the situation for both males and females.

With regards to specific overseas born groups, Foster (1991, pp. 66–5) found that:

> Persons born in Greece achieved the highest rate of participation in tertiary education in the 15 to 19 years age group (37.2 %) followed by those born in America (30.1 %) and Lebanon (29.0 %). Persons born in New Zealand (7.7 %), Vietnam (13.5 %) and Africa (17.5 %) experienced the lowest participation rates in tertiary education.
>
> In the 20 to 24 years age group, persons born in Africa achieved the highest rate of participation (39.0 %) followed by those born in Vietnam (38.2 %) and Greece (30.2 %). The lowest rates of participation in tertiary education in this age group were recorded by persons born in the United Kingdom and Ireland (15.6 %), Yugoslavia (16.8 %) and America (17.2 %).

Further inspection of table 2.16 also reveals that those born in non-English speaking countries had a far stronger representation in universities and colleges of advanced

Table 2.16: Persons aged 15 – 24 years: participation rates in tertiary institutions by type of institution and birthplace at May 1990.

	Aged 15 – 19 years			Aged 20 – 24 years		
Birthplace	Attended higher education institution[1] (%)	Attended other tertiary education institution (%)	Total (%)	Attended higher education institution[1] (%)	Attended other higher education institution (%)	Total (%)
Australia	10.1	13.2	23.3	12.5	9.2	21.7
Overseas	13.9	8.0	21.9	18.0	11.6	29.6
Africa	13.1	4.4	17.5	23.1	15.9	39.0
America	21.8	8.3	30.1	17.0	0.2	17.2
Asia	17.5	9.4	26.9	37.4	18.0	55.4
Vietnam	9.9	3.6	13.5	31.1	7.1	38.2
Lebanon	14.5	14.5	29.0	5.2	13.1	18.3
Europe	11.7	14.0	25.7	9.6	8.5	18.1
Poland	*	*	*	*	*	*
Greece	7.8	29.4	37.2	9.7	20.5	30.2
Italy	*	*	*	13.1	11.1	24.2
Malta	*	*	*	*	*	*
Yugoslavia	*	*	*	3.5	13.3	16.8
UK & Ireland	10.6	14.2	24.8	8.9	6.7	15.6
Oceania	14.5	0.4	14.9	8.2	13.0	21.2
New Zealand	6.3	1.4	7.7	5.2	12.6	17.8
Main English speaking countries	10.0	8.6	18.6	8.6	8.1	16.7
Non-English speaking countries	18.8	9.1	27.9	24.9	14.2	39.1
Total	10.6	12.6	23.2	13.4	9.6	23.0

Source: Foster et al., 1991, p. 71, (ABS May 1990, cat. no. 6227.0 (unpublished data)).

[1] Consists of universities and colleges of advanced education.

* Sample size too small for accurate result.

education than other tertiary education institutions when compared to those born in English speaking countries (including Australia). These differences were most marked for the 20 to 24 year old cohort where for the main English speaking group, the proportion in universities and colleges of advanced education was 8.6 % compared with 8.1 % for other tertiary education institutions. The proportion of the main non-English speaking country born group who were attending a university or college of advanced education was much higher at 24.9 % while the proportion attending another tertiary education institution was 14.2 %.

Thus when age is taken into account, although some non-English speaking country born groups were still found to be under-represented in higher education, non-English speaking country born persons as a whole were found not to be under-represented in higher education.

As mentioned earlier, as the vast majority of full fee paying overseas students are Asian and thus make up part of the non-English speaking country born student population, the inclusion or exclusion of these people changes the representation statistics for non-English speaking country born persons. As the Office of Tertiary Education's report on the ethnicity of South Australian university students indicated, when full fee paying overseas students are excluded from data, those born in non-English speaking countries made up 10.2 % of higher education students (compared with 10.3 % of the South Australian population). However, when full fee paying overseas students were included, this figure increased to 12.9 %, this figure being higher than the proportion in the total state population even without considering age or qualifications of non-English speaking country born persons in South Australia. It is a matter of opinion whether or not full fee paying overseas students should or should not be considered when calculating the representation of non-English country born persons. As overseas students are not residents of Australia, some exclude them. However, as they are in Australia whilst studying and taking up university places in the higher education system, there is also reason to include them.

The Office of Tertiary Education's report on the ethnicity of 1991 South Australian university students[10] also considered the proportions who used a language other than English in their home. With the exclusion of full fee paying overseas students, it was found that 16.7 % used a language other than English in their home

[10] *Ethnicity of University Students in South Australia 1991*, op. cit.

compared with 13.2 % of the South Australian population as indicated by the 1986 Census. When full fee paying overseas students where included in the data, the proportion of university students who used a language other than English in their home was considerably higher at 19.2 %.

The report also highlighted differences in proportions across various subject areas of those who used a language other than English at home[11]:

> Over one third of students (34.9 %) enrolled in *Computing and Mathematics* come from a home in which a language other than English is spoken, as do over one quarter of *Engineering* (28.3 %) amd *Health (not Nursing)* (25.2 %) students, and over one fifth of *Architecture* students (21.2 %). The fields of study in which students from a non-English speaking background are least represented are *Agriculture* (8.3 %), *Nursing* (9.3 %), *Education* (12.3 %) and *Humanities and Social Sciences* (12.7 %).

The above findings on the proportions of non-English speaking background persons in South Australian universities and particular fields of study in 1991 are echoed in the findings of the Higher Education Series 'Ethnicity' report on 1990 higher education students Australia wide[12].

2.3.2 Socio-Economic Status and Participation

Much research has been carried out in relation to under or over-representation in higher education with regard to socio-economic status. Three main variables which have been used for determining socio-economic status have been parent's occupational status, education level and income level. The conclusions of the numerous studies which have been carried out on the interaction of socio-economic status and higher education participation all point to university students and, to a lesser extent, college of advanced education students, as coming from above average socio-economic status backgrounds (Anderson et al. (1978), Anderson and Vervoorn (1983), Beswick et al. (1983), Miller (1984), Linke (1985), Richardson (1985), Sturman (1985), Power et al. (1985), and Williams (1987)).

Where occupation is concerned, a much higher proportion of students coming from professional or managerial families, and a much lower proportion of students coming from skilled or unskilled manual worker families, participated in higher education

[11] *Ethnicity of University Students in South Australia 1991*, op. cit. p. 1.
[12] *Higher Education Series*, Report No. 11, 'Ethnicity', op. cit.

when compared to the proportions of those in these occupations in the community at large. Williams (1987) devised a variable of 'Family Wealth' based on the student's family housing characteristics and possessions characteristics. For example, factors such as the number of bedrooms and bathrooms in the family home together with possession of telephones and dishwashers were taken into account. It was found that those from the wealthiest 25 % were very much over-represented in both universities or colleges of advanced education while those from the poorest 25 % were under-represented in these higher education institutions.

When the education and income level of parents are considered, research shows that those with parent(s) who held a degree or were in the higher income brackets, were over-represented in higher education. Not all research shows, however, that those with parents in the lowest education and income groupings are under-represented. Power et al. (1985) in their study of first year students in South Australian higher education institutions in 1985, found that those with parents in the lowest income bracket, or in the lower educational levels, were in fact also over-represented in higher education. As table 2.17 shows, the group of students with parents who had only a Primary school education was in fact the most over-represented

Table 2.17: Parental education of first year 1985 students and that of adults 35 – 45 in South Australia, 1982.

Education Level	Father %	Males* %	RPR	Mother %	Females* %	RPR
Degree	23.0	11.4	2.00	9.8	7.6	1.29
Cert/Dip	5.8	16.9	0.34	10.1	25.7	0.39
Trade level/Other	14.4	30.7	0.47	8.2	5.2	1.58
Secondary 11/12	20.2	14.6	1.38	28.1	26.1	1.87
Some Secondary	23.5	21.4	1.10	30.7	30.4	1.00
Primary	12.2	5.3	2.30	13.1	5.0	2.62

* ABS Catalogue No. 4010.0, Table 4.44 1982, 35–44 age group.
Source : Power et al., 1985, p. 45.

educational group. Also, the group with parental income less than $ 4 000 per annum was the second most over-represented income group after those in the highest income category of over $ 34 000 per annum (table 2.18).

Differences in socio-economic status representation also occurred at the more detailed faculty level. Anderson and Western (1970) described the socio-economic

Table 2.18: Distribution of combined parental income of single first year students living at home compared with distribution of estimated family incomes in Australia* in 1985.

Parental Income Level	(a) Enrolled %	(b) Australia %	RPR a/b
Up to $4000 p.a.	8	67	1.33
$4001 – 8000 p.a.	3	18	0.17
$8001 – 12000 p.a.	10	12	0.83
$12001 – 18000 p.a.	12	21	0.57
$18001 – 26000 p.a.	20	19	1.05
$26001 – 34000 p.a.	18	13	1.38
Over $34000 p.a.	29	11	2.69

* Family income from ABS Catalogue 2452.0 with adjusted CPI of 1.281 to September 1984.

Source : Power et al., 1985, p. 45.

background of 1965 entrants to all engineering and law faculties in Australia, and 1967 entrants to medicine and teacher education. The criteria used for determining socio-economic background were students' fathers' occupations, education levels and income levels. Where occupation was concerned, teacher trainees had the smallest proportion of fathers with professional or managerial occupations and the largest proportion of manual workers. Those in the engineering faculty had a high proportion of fathers who were small-scale businessmen whilst the medical and law faculties had the highest proportions of students with professional fathers. For education levels, students in medicine or law had the most educated fathers followed by engineering students, and then trainee teachers who had fathers with the least amount of education. Fathers' incomes were highest for the medical and law faculties and lowest for engineering and education.

Similar trends were found for University of New South Wales 1969 full-time first year student data compiled by Katz, Barrett and Firth (no date) (cited in Anderson and Vervoorn (1983)), the universities sample data of Anderson et al. (1978) and the data of Power et al. (1985). In general, those in the faculties of medicine, law, architecture and engineering were most likely to have fathers with a tertiary education or a professional occupation, whilst those from education, commerce and arts were least likely.

Tied up with socio-economic factors in participation is the type of secondary

school system attended. Williams (1987) clearly showed that those from independent schools were very much over-represented in higher education and particularly so in university education. Those from Catholic schools were the next most likely to participate in university education followed by those from the government school sector. Further evidence of the greater participation of students from independent (non-Catholic) schools and the lower participation of government school students in university education, was given by Williams (1982).

Again, trends exist for inter-faculty differences in participation. Anderson et al. (1978), Williams (1982), Anderson and Vervoorn (1983) and Power et al. (1985) all supplied data on the school background of students in particular faculties. These data consistently revealed that the medical and law faculties were the faculties with the greatest proportion of students from independent schools. Data for engineering and economics/commerce varied somewhat with some data showing these faculties to be among those with relatively lower proportions of students from independent schools while other data revealed the opposite position. The faculties of science, education and arts were usually those with the lowest proportions of independent school background students. The Catholic school group was the group which appeared to be, on the whole, most evenly represented across the faculties. There are some 'hiccups' when specific sets of data are considered though. For example, Anderson et al. (1978) found Catholic school background students to be least represented in engineering after education whereas Power et al. (1985) found this category of students to be vastly over-represented in engineering. This could be due to the time difference between when the two sets of data were collected or to the fact that the data of Anderson et al. (1978) was a nationwide sample compared with the South Australian only data of Power et al. (1985). Government school background students were shown to be most likely to enrol in the faculties of education, science or engineering and were most under-represented in the medical and law faculties.

2.3.3 Other Variables Concerned with Participation in Higher Education

Other variables which are commonly investigated with regard to participation in higher education are gender, age and rurality. As the rate of retention of females to Year 12 has caught up and surpassed that of males, so too has the degree of

participation of females in higher education increased. Since higher education institutions were formed in Australia, females have been in the minority with regard to participation in these institutions. The recent data of Williams (1987) however, indicated that parity of male/female participation in higher education had almost been reached. When universities and colleges of advanced education were considered separately though, William's (1987) data indicated that females were still somewhat under-represented in universities but over-represented in colleges of advanced education. Anderson and Vervoorn (1983), from data compiled from Australian Bureau of Statistic's *Universities* bulletins, showed how for universities there was a 'participation pyramid' for women whereby they were almost at parity with enrolment of males in Bachelor degree courses (the base of the pyramid) but at the tip of the pyramid made up only 24 % (as at 1980) of Doctoral students in Australian universities.

The most recent data available on female participation in higher education is from the Department of Employment, Education and Training's Higher Education Series report number 1 titled 'Female Students'.[13] The report revealed that females were over-represented for the first time in Australian higher education in 1987 with a participation rate of 50.1 %, this participation rate increasing further in 1988 to 51.1 % of enrolments. The report attributed much of the increase in female participation since 1985 (when females represented only 47.6 % of enrolments) to the transfer of basic nurse education from hospitals to Colleges of Advanced Education. Similar to the findings of Anderson and Vervoorn (1983), the report showed that although women represented more than 50 % of higher education students in 1988, they accounted for only 45 % of postgraduate students. This representation is greater than a few years ago though when, for example, women represented only a third of postgraduate students in 1979.

The increase in the overall participation of females in higher education has also been noted for many overseas countries. This was shown in a summary of a survey of student flows in higher education carried out in fourteen industrialised countries, eight Western European, four Eastern European, the United States and Japan (Cerych & Colton, 1980). The survey was conducted over the period 1965 to 1975. It was found that:

[13] *Female Students*, Higher Education Series report no. 1, Department of Employment, Education and Training, April 1989.

> A continuous growth in the proportion of women among the student population— both in the university and non-university sectors—is very definitely common to all countries covered by the present survey, ...
>
> In virtually all the countries considered, women now represent more than 40 % of new entrants to higher education as a whole; indeed, in several cases this proportion is close to 50 %, while in Sweden it has reached almost 60 %. It should be noted, however, that despite this rapid growth, there are still countries where female students *in universities alone* account for some 30 % of enrolments or less (Cerych & Colton, 1980, p. 32).

Striking gender imbalances also occur in specific fields of study. National Australian data compiled by Anderson and Vervoorn (1983) and South Australian data of Power et al. (1985) both indicated that engineering, architecture/building and agriculture/forestry were major areas of female under-representation. Education and the humanities were the areas of study where females had their strongest representation. The same picture was revealed for female higher education students in 1988 in the Higher Education Series 'Female Students' report.[14].

As has always been the case, the majority of full-time university students in Australia are under the age of 23. Figures compiled by Anderson and Vervoorn (1983, p. 37) showed that, from 1961 to 1980, the proportion of full-time university students under the age of 23 dropped by 6.9 %. The same figure for part-time students was much larger at 31.5 %. Over the same period, those over 30 years of age increased in full-time participation by 4 %, while for part-time participation, the figure was much higher at about 23 %.

The rural/urban location of a student's home or secondary school attended is another aspect which has been investigated in relation to participation in higher education. As Anderson and Vervoorn (1983, p. 84) pointed out:

> ... the evidence is clear that students living in country areas are three times less likely than their metropolitan counterparts to continue to the final years of secondary school and enter a higher institution.

Further evidence supporting the lower participation rate of rural persons in higher education comes from an analysis of an Australian study of 3166 males between the ages of 30 and 69 by Miller (1984). He found the participation rate in post-secondary education of those living in metropolitan areas to be 17.8 %, whilst for those in other urban and for those in rural areas the respective participation rates were 14.1 %

[14] *Female Students*, ibid.

and 8.5 %. More recent data from the Department of Employment; Education and Training's Annual Statistical Collections supported these findings revealing that:

> Participation in higher education among people from remote areas, per head of population, was roughly half that of people from urban areas. The participation rate for rural dwellers was slightly higher than for remote areas.[15]

One of the most likely reasons for this situation is that the vast majority of higher education institutions, particularly universities, are in urban areas. This makes it virtually impossible for those in rural areas to attend a university unless they move to the metropolitan areas. This is probably difficult to achieve for many due to financial constraints. The lower retention rates of rural secondary schools has also been considered as a factor for producing the relatively lower participation of rural students. However, these low retention rates may be due to the low aspirations of the students which in turn may be caused by students not seeing any point to completing their secondary education as they would not be in a position to attend a tertiary institution even if they were offered entry.

Family size is a variable which has been investigated mostly in relation to secondary school retention rates rather than higher education participation. One exception is the Australian study of 3166 males by Miller (1984). He found that the average family size (that is, number of siblings) of those who had participated in post-secondary education was much lower than for non-participants.

2.4 Academic Achievement in Higher Education

Many different criteria have been used for the measurement of academic achievement in higher education. Time taken to graduate; withdrawal, failure and attrition rates; and grade point averages have all been employed. The most difficult of these criteria to interpret is that of withdrawal since there are a number of reasons why a student might withdraw from a course. For example, withdrawal may be due principally to the inability of the student to cope with the academic demands of the course, or, it may be totally due to external factors such as insufficient finances. Also, a student's withdrawal from a course may constitute his/her total withdrawal from

[15] *Urban and Rural Participation* Higher Education Series report no. 8, Department of Employment, Education and Training, September, 1990.

tertiary education, or, the student may take up another course either in the same institution or another. Some of these interpretive difficulties also apply to the other criteria of academic achievement. Thus caution has to be used when interpreting such data.

Apart from criteria used for measuring academic achievement, many predictors of academic achievement have been investigated. They range from factors such as secondary school achievement and socio-economic background through to factors such as parents' main language spoken at home, family size and place of residence. Much research on these factors is scattered and restricted to local sample groups. A factor found to have a significant influence on academic achievement in one particular course, faculty institution or state may not have in another course, faculty, institution or state. Nevertheless, enough research has been done on a number factors which has yielded consistent results enabling one, with a high degree of confidence, to claim the existence of a number of general trends.

2.4.1 Ethnicity and Academic Performance

"There has been very little research which has examined the educational performance of immigrant Australians in tertiary education" (Sturman, 1985, p. 66). This is an opinion which has also been expressed by other researchers in this field. The main exception mentioned by Sturman was the work of Fensham and Taft (1973) who, using withdrawal rates as an indication of academic performance, compared the withdrawal rates of higher education immigrant and non-immigrant students. They found that overall, immigrant students of non-English speaking origin had a slightly higher rate of withdrawal. Fensham and Taft also followed the progress of students through their higher education studies and found that in the postgraduate population, immigrant students were considerably over-represented.

Other studies mentioned by Sturman (1985) were those of Horne (1970, 1974) who analysed performance data of second year engineering students studying in Victorian colleges of advanced education. Of the main immigrant groups studied in the first study, namely, European born, British born and Asian born, only the Asians were found to perform significantly worse than the Australian students. However, in the follow-up study (Horne 1974), where completion of course was used as the performance criteria, the Asian born had the best record of the immigrant students. If

length of time to complete the course is to be used as the performance criteria, then the Asian and British born students would rank *behind* the Australian and European students as the former took somewhat longer to complete their courses than the latter students. No significant differences were found in the proportions of students from the different immigrant groups completing their course with distinction.

One study not mentioned by Sturman (1985) was that of Gilson (1962) who investigated the scholastic attainments of non-English speaking European born students in the School of General Studies at the Australian National University and compared these findings with those for Australian born students. She found that the migrant students had, overall, much higher failure rates compared with the Australian born students. When the migrant student sample population was divided into those who arrived in Australia before attaining the age of eighteen years and those who arrived in Australia after attaining the age of eighteen, it was found that the former group performed significantly worse than the latter group, despite the fact that the former had a higher standard of English. Gilson (1962) attributed this to the eighteen plus age group taking into account their English language difficulties more so than the under eighteen age group when choosing subjects for study. This is illustrated by the fact that the eighteen plus age group chose more European language subject units than the under eighteen group. Also, unlike the under eighteen group, none of the over eighteen group undertook an English unit.

Using attrition rates as a measure of academic achievement, the study of a sample of 992 tertiary education students in Victoria in 1981 by Beswick et al. (1983) gives some further insight into the performance of non-English speaking background persons. When the student's birthplace was considered, no significant differences in discontinuation from tertiary study was found for the whole sample (thc university, institute and teachers' college samples together). However, within the institute and university samples, there was a tendency for a higher proportion of Australian-born students to discontinue. Greater differences were found when the birthplaces of parents were considered. For the whole sample, it was found that a higher proportion of those with an Australian-born father discontinued, particularly in the university and college samples. Conversely, those with a father born in a non-English speaking European country, particularly a southern European country, were more likely to persist with study at the university or college. A similar pattern also occurred in

relation to mothers' birthplaces. Beswick et al. (1983, p. 144) concluded that:

> ... Australian-born children and children from Australian parentage are more likely to withdraw from tertiary study than children from European non-English speaking backgrounds.

Most, if not all, other data concerning ethnicity and tertiary academic performance used much broader ethnicity variables such as 'English only' or 'Other' for language spoken at home, or, 'Australia' or 'Other' for mothers' and fathers' countries of birth. Such was the case for the study of withdrawal and attrition in South Australian tertiary institutions conducted by Power et al. (1986). Their sample consisted of 3778 students who entered South Australian tertiary institutions in 1985. Data were analysed to reveal the first to second year attrition rates, the attrition rate being equal to the sum of the withdrawal and change rates, and the percentage of students failing more than a quarter of subjects completed.

Table 2.19 gives the results found by Power et al. (1986) for parents' birthplaces and language spoken at home. When language spoken at home was considered, there was negligible difference for the withdrawal and change rates between students who came from homes where English was the *only* language spoken and those where languages other than English were spoken at home either exclusively or in addition to English. However, those from 'English only' homes were found to be significantly less prone to failure than those from homes where other languages were spoken, the failure rates being 13.2% and 20.4% respectively. With both mothers' and fathers' birthplaces classified as either Australia or 'Other', the Australia category for both cases had a lower percentage of withdrawals, changes and failures, although the differences were small. When these small differences were added, the attrition rate was just under 4% greater for those with a mother or father born outside Australia.

Thus the greater attrition rates for those of non-English speaking backgrounds correlated more strongly with language background than with parents' birthplaces. Also, non-English speaking background students were not on the whole disproportionally over-represented with regard to high withdrawal rates but were in respect to attrition through academic failure.

Power et al. (1987) in their study of "Success in Higher Education" investigated the correlation between language spoken at home and the grade point averages of students. It was found that for each higher education institution in South Australia,

Table 2.19: Attrition rates for 1985 entrants by language and parent's birthplace.

	Withdraw %	Change %	Fail %	Attrition Rate %
Language Spoken at Home				
English only	13.9	3.2	13.2	30.3
Other	14.2	3.6	20.4	38.2
Father's Birthplace				
Australia	13.7	2.8	14.0	30.5
Other	14.3	4.0	15.2	33.5
Mother's Birthplace				
Australia	13.8	3.0	13.4	30.2
Other	14.2	3.6	16.3	34.0

Source: Power et al. (1986, p. 12).

school leaver entrants with 'English only' home language backgrounds were more likely to have a higher grade point average than school leaver entrants where English was not the only language spoken at home. Two out of the five correlations were statistically significant. A similar analysis was made for non-school leaver entrants. Here, those from 'English only' backgrounds were again more likely to have a higher grade point average for each institution studied except Roseworthy College (this exception not being statistically significant). Again, two out of five correlations were found to be statistically significant.

Further information on non-English speaking background student academic performance was given by Holton and Salagaras (1988). They obtained data from La Trobe University for students first enrolled in 1986. This investigation revealed that

> ... fail grades were marginally higher among non-English speaking background students than those from English speaking backgrounds. More interestingly, achievement rates in terms of A grades, B grades and C grades were all significantly higher for English speaking background students, while non-English speaking background students achieved far higher rates of D grades. (Holton and Salagaras, 1988, p. 29)

Despite most research showing that non-English speaking students as a whole performed worse than average, there was considerable variation in performance between specific ethnic groups. Power and Robertson (1987) found, for example, that

> Asian students selected for entry to Adelaide University tend to be very

> able and to perform very well indeed; students from Greek and Italian families at Flinders University perform as well as students from Anglo-Australian families, but are less likely to be successful at the South Australian Institute of Technology or the South Australian College of Advanced Education (cited in Holton and Salagaras, 1988, p. 28).

However, Sturman (1985) and Holton and Salagaras (1988) concluded with respect to data on non-English speaking background student academic performance in higher education that there was very little that dealt with specific ethnic groups.

Some research that has considered specific ethnic groups is that of Burke and Davis (1986) and Birrell (1987) who analysed 1981 Australian Census data on the proportions of 20–24 and 25–29 year olds in Australia holding a degree by birthplace, and the proportions of 20–24 and 25–29 year old Australian-born persons holding a degree by father's birthplace (see table 2.20). Although these figures do not measure the academic achievement of specific ethnic groups by proportions gaining distinctions or credits, or by proportions completing a degree in the minimum time, they do give an indication of whether or not those from non-English speaking backgrounds are fulfilling their aspirations to acquire a degree. In interpreting the figures in table 2.20 below, Burke and Davis (1986, p. 102) had the following to say:

> A slightly higher percentage of Australian-born persons held degrees than did those born in other countries. However, a much higher percentage of those born in Lebanon and Indo-China held degrees, perhaps some of them acquired prior to arrival in Australia. Relatively low percentages of those born in Greece, Italy, Malta and Yugoslavia held degrees. Among the younger age group, 20 to 24, a higher than average percentage of those with fathers born in Italy held degrees. Overall, among Australian born persons, a slightly higher proportion of those with fathers born overseas held degrees compared to those with fathers born in Australia.

The relatively high proportion of degree holders among those with a Greek or Yugoslavian father, and the low proportion of those with a Maltese father, match the previous findings of Meade (1983) who found that those from Greek or Yugoslavian backgrounds were the most likely to complete their secondary schooling whilst those with a Maltese background were the least likely (see section 2.1). The low proportion of Maltese-born persons, or Australian-born persons with a Maltese father, holding a degree reflects the generally very low aspirations of Maltese background persons to either complete secondary school or enter tertiary education.

An interesting observation is the very high proportion of Lebanese 20–29 year olds

Table 2.20: Percentage[1] holding a Degree by birthplace by age and percentage[1] of Australian-born holding a Degree by birthplace of father by age, Australia 1981.

Birthplace of father	All persons by birthplace		Australian-born by father's birthplace[2]	
	20–24	25–29	20–24	25–29
Australia	4.9	8.5	4.8	8.3
UK and Eire	4.7	8.0	4.9	8.8
Netherlands	4.1	7.7	4.6	9.1
Greece	3.5	4.5	6.9	13.1
Italy	3.0	4.3	5.2	7.7
Malta	2.2	2.1	1.8	2.5
Yugoslavia	1.1	2.9	5.5	9.9
Lebanon	5.2	10.7	–	–
Indo-China	7.2	17.7	–	–
New Zealand	2.4	4.2	7.7	13.0
Total[3]	4.8	8.4	4.9	8.5

Source: Burke and Davis, 1986, p. 104. Australian Bureau of Statistics, 1981 Census of Population and Housing, Cross Classified Characteristics Australia (2452.0) and data extracted from Tape MT048 by the Australian Institute of Multicultural Affairs.

[1] Percentage of group with a degree.

[2] Lebanon and Indo-China are not separately identified because of the small population aged 20–29 with fathers born in those countries: Lebanon 2,000 and Indo-China virtually nil.

[3] For the 'All persons' category: Other overseas countries and a small number of persons born at sea or who have not stated their birthplace are included in the total.
For the 'Australian-born' category: Includes all other countries of fathers' birth and not stated.

in Australia who hold a degree. This supports the previous research findings in Australia that those of Lebanese background have generally high aspirations to not only complete their secondary schooling but also to enter tertiary education (see section 2.1 & 2.2). However, as previous research has shown, those of Lebanese background in Australia are substantially under-represented in higher education in Australia (see section 2.3.1). The Lebanese then, are one ethnic group in Australia who, despite aspiring to higher education, are mostly unable to fulfill these aspirations.

2.4.2 Socio-economic Status and Academic Performance

The work of Power et al. (1986) and Power et al. (1987) investigated a number of socio-economic background variables and their correlations with academic performance and attrition rates. Parents' education levels, occupational categories and income levels were all considered along with the type of secondary school attended by the student. Tables 2.21 and 2.22 give the results found. Students who had a

Table 2.21: Attrition rates for 1985 entrants by parental education and occupation level and student's school type.

	Withdraw %	Change %	Fail %	Attrition Rate %
Father's Education				
Degree or Higher	8.3	4.2	15.2	27.7
Other	15.3	3.2	14.1	32.6
Mother's Education				
Degree or Higher	7.9	6.0	16.2	30.1
Other	14.4	3.1	14.2	31.7
Father's Occupation				
Semi/High Professional	10.2	4.2	15.2	29.6
Other	14.7	2.9	14.5	32.1
Mother's Occupation				
Semi/High Professional	10.1	3.5	13.5	27.1
Other	14.6	3.1	15.0	32.7
School Type				
State	10.5	3.1	17.8	31.4
Catholic	8.3	3.3	19.1	30.7
Private	9.5	4.5	18.4	32.4

Source : Power et al., 1986, pp. 11–12.

parent who held a degree were found to have a slightly higher rate of failure but a considerably lower rate of withdrawal compared with those whose parents had no complete higher education. As table 2.22 reveals however, Power et al. (1987) found that parents' education levels, on the whole, appeared to have no significant bearing on a student's grade point average.

Mixed results were found by other researchers. Otto (1975), for example, found that most research prior to his own pointed towards those students with parents of above average education as more likely to enter and be successful in universities and

Table 2.22: Correlations for 1985 Entrant Grade Point Averages by Various SES variables

Predictor	School Leavers					non-School Leavers				
	Adelaide Uni	Flinders Uni	SAIT	SACAE	Roseworthy	Adelaide Uni	Flinders Uni	SAIT	SACAE	Roseworthy
	r	r	r	r	r	r	r	r	r	r
Mother's Education	07	04	06	-09*	-29	-02	-01	-02	-02	-05
Father's Education	13*	01	01	08*	23	00	08	08	05	-08
Father's Occupation	09*	02	02	08*	05	06	14*	-12*	01	-25*
State School	02	06	03	00	05	-	-	-	-	-
Independent School	01	-08*	02	07	-32*	-	-	-	-	-
Catholic School	-04	00	-05	-07*	25*	-	-	-	-	-
Financial support :										
TEAS (Austudy)	-07*	08	03	-13*	11	-01	-04	08*	04	11
P/T work	-02	-10*	-06	-16*	11	05	03	-07	06*	03
Parent	05	12*	04	21*	-10	03	-07	-09	-03	-32*
Spouse	-	-	-	-	-	15*	16*	18*	20*	26*
Self income	-05	-12*	05	-11*	10	-01	18*	01	-14*	16
Parents income	00	11	05	10	-23	-	-	-	-	-

Source : Power et al., 1987, pp. 21–22.

* $p < 0.05$ (1 tail)

colleges in Australia. Despite this finding though, his main study of 1970 matriculant entrants into the faculties of Arts and Science at the University of Adelaide found that, overall, higher examination marks were obtained by students whose fathers had no post-secondary education. Again contrary to expectations, Beswick et al. (1983, p. 151) in their study of 992 Victorian university, institute and college students in 1981, found for the university sample that 51 % of fathers of discontinued students had undertaken some tertiary education compared with 42 % of fathers of students who persisted with their course of study, this difference being statistically significant. A similar result was found when mothers' educational levels were considered. For the university sample, 40 % of the mothers of discontinued students had obtained a degree or some professional qualification compared with 29 % of mothers of students who persisted with their course of study. No significant differences in relation to parental education levels and discontinuation were found for the institute or college samples.

For parents' occupations, Power et al. again found little difference in failure rates but a higher withdrawal rate for those students with parents who were not in the semi/high professional occupation categories. Correlations of father's occupation and student's grade point average gave mixed results. For school leavers, the general trend was that those with fathers in a professional occupation had higher grade point averages. This was a significant factor for both the University of Adelaide and the South Australian College of Advanced Education. A similar situation was found for non-school leavers at Flinders University. However, for non-school leavers, a significant reverse of this trend was found for the South Australian Institute of Technology and Roseworthy College students. Thus overall, there was no consistent relationship between parents' occupation levels and academic achievement, a conclusion which was also reached by Miller (1970), Otto (1975) and Beswick et al. (1983). Beswick et al. (1983) did note however, that a higher proportion of the discontinued students in each institution (university, institute and college) had fathers in the upper professional category compared with students who continued with their course of study. A similar but more marked result was found when mother's occupational status was considered.

Parental and student incomes were found by Power et al. (1986) to be other factors identifying high or low attrition rates. Those with parents' income less than

$ 8 000 p.a. (in 1984/85) were identified as one of the groups most likely not to proceed to the second year of their studies. This same group was also identified as one of the groups most at risk of withdrawal. The same could not, however, be said for failure rates where rates were highest for the $ 12 001–18 000 parent income category. In their analysis of parental income levels and discontinuation from tertiary study, Beswick et al. (1983) found no significant differences. They did note however, that within each institution type (university, institute and college) in Victoria, a higher proportion of discontinued students than continuing students reported their parental income to be at the higher end of the spectrum.

For student's income, Power et al. (1986) found a clear trend with withdrawal rates, namely, the higher the student's own income, the higher the withdrawal rate. This is most probably due to the fact that students earning more were working longer hours and thus could not find sufficient time to cope with their studies and so withdrew. No specific student income category was named by Power et al. (1986) as a high risk failure group.

Correlations of financial support variables with students' grade point averages indicated that for school leavers, those who relied on parental support performed better than those who relied on TEAS (now AUSTUDY) or part-time work. For non-school leavers, those dependent on a spouse or partner performed significantly better than those dependent on other forms of financial support.

Tied up with socio-economic status variables was the type of secondary school system attended by the student. Power et al. (1986) found that differences in withdrawal and failure rates between students from different school systems were small and followed no general trend. Similarly, no significant consistent trend was to be found between school system attended and grade point average. This finding was not, however, consistent with the findings of earlier research on the relationship between school type and educational performance which consistently found that students from Catholic schools performed worse than students from state or independent schools. Hohne (1951, 1955) studied two first year intakes of students at the University of Melbourne, firstly the Faculty of Arts and secondly, the Scientific Faculties. Criteria used for determining educational performance were pass rates, eventual graduation rates and graduation in minimum time. For both faculty groups he found that those from independent schools performed best, those from state schools being less suc-

cessful, whilst those from Catholic schools were found to perform significantly worse than those from either independent or state schools.

Later studies supported the findings of Hohne. At the University of Western Australia, Anderson (1961) found that students from Catholic schools performed poorly in the Faculties of Arts, Science and Medicine. Also, Hughes (1961) found that of the entrants to the University of Tasmania from 1950 to 1955, 43 % of those from Catholic schools eventually graduated compared with about 67 % for the whole intake population. One exception to the general finding that those from Catholic schools performed worst of all was found by the study of 1961 to 1963 first year full-time metropolitan school entrants to the University of Adelaide by Jordan (1966). Here it was found that those from Catholic Boys' schools tended to have lower failure rates than for those from either state or independent schools.

Beswick et al. (1983) found from their sample of Victorian university, institute and college students, that differences in the propensity to discontinue tertiary education between students from different secondary school systems were insignificant for the university and college samples. However, for the institute sample it was found that over 75 % of students who discontinued their tertiary study had attended a state school compared with 60 % of those who continued with their course of study. Conversly, the proportion of students from either an independent or Catholic school who continued was almost twice that of the proportion of those from these school systems who discontinued.

2.4.3 Other Variables Concerned with Academic Achievement

Power et al. (1986) in their study of 1985 entrants to higher education in South Australia also investigated a number of other factors in relation to attrition rates and grade point averages. These included gender, age, full-time or part-time enrolment, rurality of secondary school attended, matriculation score, whether school leaver or mature age entrant, marital status, and living arrangements. Tables 2.23 and 2.24 give the results found.

A number of studies have found that females generally performed better in higher

education than males. In 'The 1961 Study' [16] which studied the progress of new bachelor degree entrants to Australian universities in 1961, it was found that of those students remaining on a full-time basis, 45.8 % of females completed their degree in the minimum time compared with only 39.6 % of males. Power et al. (1986, 1987) also found that females performed better than males. The overall attrition rate for male entrants to South Australian higher education in 1985 was 36.3 % compared with only 27.8 % for females (table 2.23). Although females were found to be slightly more likely to withdraw, their failure rate was significantly lower than that for males (10.7 % and 18.9 % respectively). Correlations of sex with grade point averages also revealed that females generally performed better than males.

The earlier findings of Otto (1975) agreeed with those of Power et al. (1986, 1987). Otto found that the first year performance of females in his sample was higher than for males. However, this trend was found not to continue through the later years of study. In the second year, the performance of females was only slightly above that for males and by the third year, there was no appreciable difference in examination performance.

Many studies have been conducted on the relationship between age and academic success. Results appeared to fall neatly into two categories, those for school leaver entrants and those for mature age entrants. Philip and Cullen (1955) found that for direct school leaver entrants into tertiary education, the younger students performed much better than the older students. At the University of Tasmania, Hughes (1961) found that 52 % of those who entered aged 17 to 17.5 years graduated in minimum time compared with 43 % of those aged 17.7 to 18.6 years. Sanders (1961) also found a similar trend for entrants to the University of Western Australia. Some twenty six years later, Power et al. (1987) found that the younger direct school leaver entrants generally had higher grade point averages for their tertiary studies than the older school leaver entrants.

These trends were reversed when mature age students were considered. Many studies, including Eaton and West (1980), Sun-Mook (1984) and Power et al. (1986, 1987), found that mature age students performed just as well, if not better, than the student population as a whole and that within the mature age group, there was a

[16] Australian Department of Education and Science, *The 1961 Study: An Analysis of the Progress of New Bachelor Degree Entrants to Australian Universities in 1961*, 1971.

Table 2.23: Attrition rates for 1985 entrants by various SES variables.

	Withdraw %	Change %	Fail %	Attrition Rate %
Sex				
Male	13.7	3.7	18.9	36.3
Female	14.2	2.9	10.7	27.8
Age				
Less 17 yrs*	11.4	4.1	12.7	28.2
17–19	10.2	3.1	17.6	30.9
20–24	18.4	3.9	14.3	36.6
25–29	19.3	3.6	12.5	35.4
Over 30*	19.5	2.8	7.8	30.1
School Location				
Urban	13.3	3.6	15.1	32.0
Rural	14.6	2.9	14.0	31.5
Matriculation Score				
Less 295	21.1	1.9	12.5	35.5
295–349	13.0	4.2	16.9	34.1
355–394**	13.0	3.3	15.9	32.2
Over 395	7.7	3.0	8.7	19.4
Enrol Status				
Full-time	10.4	3.7	15.6	29.7
Part-time	26.2	1.6	10.7	38.5
Enrol Type				
School Leaver	10.1	3.4	18.1	31.6
Mature/Special	17.0	3.1	11.7	31.8
Marital Status				
Married	21.5	3.0	8.9	33.4
Single	12.1	3.3	15.9	31.3
Living Arrangements				
With Parents	10.3	3.3	17.1	30.7
Other	19.9	3.0	10.0	32.9

Source : Power et al., 1986, pp. 11–12.

strong correlation of the older the student, the better the performance. For example, for their non-school leaver sample, Power et al. (1987) found a statistically significant positive correlation between age and grade point averages for each South Australian higher education institution except one (table 2.24).

The type of enrolment, whether full-time or part-time, is also a factor which has been given attention with regard to academic performance. 'The 1961 Study' (1971) found that of those commencing bachelor degrees full-time in 1961, by the end of 1967 63.9 % had graduated, 31.6 % had discontinued and 4.5 % were still enrolled. For part-time entrants, the figures were 29.0 %, 62.5 % and 8.0 % respectively. Hohne (1951, 1955), Sanders (1961), Anderson (1963), Butterfield and Kane (1969), and Power et al. (1986) also found part-time students had much higher discontinuation and withdrawal rates than full-time students. However, the same trend did not necessarily occur for actual examination pass or fail rates or for subject grade point averages. Butterfield and Kane (1969) were particularly interested in comparing full-time and part-time pass rates for examinations actually sat for rather than pass rates for subjects merely enrolled for. They found that overall, although full-time students were still found to have higher examination pass rates than part-time students, the gap was substantially reduced when the comparison was based on other criteria for passing or failing a subject. In some cases, part-time students were actually found to have a higher pass rate for examinations sat for than for their full-time counterparts. This result was found by Power et al. (1986) where full-time students were found to have an actual failure rate of 15.6 % compared with only 10.7 % for part-time students. For a sample of 270 students enrolled at the Australian National University in 1968, Butterfield and Kane (1969) found part-time and full-time students to have passed the same proportions of examinations sat, but full-time students had a higher proportion of credits, distinctions and higher distinctions. In correlating full/part-time enrolment with grade point averages, Power et al. (1987) found no general trend.

Matriculation score, marital status, living arrangements and rurality of secondary school attended were other factors which were investigated by Power et al. (1986, 1987) (see tables 2.23 and 2.24). For the matriculation score, it was found that those scoring over 395 had much lower withdrawal and failure rates than those scoring 395 or less. The matriculation score was found to be, by far, the best predictor of

Table 2.24: Correlations for 1985 Entrant Grade Point Averages by Various variables

	School Leavers					non-School Leavers				
Predictor	Adelaide Uni	Flinders Uni	SAIT	SACAE	Roseworthy	Adelaide Uni	Flinders Uni	SAIT	SACAE	Roseworthy
	r	r	r	r	r	r	r	r	r	r
Age	-11*	-07	-07	-13*	-07	14*	20*	15*	05	32*
Sex (Male)	00	-09*	-25*	-24*	-02	-08	-08	-11*	-15*	04
Matriculation Score	57*	43*	47*	40*	47*	25*	30*	14*	11*	41*
Rural School	-06	08	18*	12*	16	-07	-06	01	-01	00
Married	-	-	-	-	-	20*	16*	01	07*	25*
Live with Parents	-	-	-	-	-	-01	-14*	-08	-05	-34*
Enrol Full-time	-02	-01	01	14*	-	01	-14*	-02	14*	05

Source : Power et al., 1987, pp. 21–22.

* $p < 0.05$ (1 tail)

first year academic performance in terms of grade point averages with all institutions giving a statistically significant positive correlation between matriculation score and grade point average. This was the case for both school leaver and non-school leaver entrants (table 2.24). The matriculation performance was also found to be one of the best predictors of first year academic performance by both Sanders (1961) and Otto (1975). However, Otto found that this relationship became significantly reduced for second year studies and for the third year of studies, the correlation became insignificant and in some cases, even reversed.

In regard to marital status, Power et al. found that although married students had a higher rate of withdrawal than single students, 21.5 % and 12.1 % respectively, they had a considerably lower fail rate of 8.9 % compared with 15.9 % for singles. This same trend occurred for the comparison between students not living with their parents and those that were, namely, withdrawal rates were higher but failure rates lower for students not living with their parents compared with those that were. Correlations with grade point averages also revealed that married students and those not living with parents tended to perform better.

The differences for withdrawal and failure rates for the variable of school location, whether urban or rural, were negligible. Neither was a general trend found between school location and grade point averages. However, for the school leaver sample, rural students at the South Australian Institute of Technology and South Australian College of Advanced Education were found to perform better than students from urban schools.

The relationship between motivational factors and academic achievement was another area of investigation. However, unlike factors such as matriculation score and parents' birthplaces, the measurement of motivational factors is subject to difficulties and conclusions arrived at from such measurements are fairly uncertain. Power et al. (1987) in their analysis of performance and motivation (both self and external) concluded that "both direct and non-direct school leavers with high motivation tend to perform significantly better than those with lower levels of reported motivation" (p. 23). Motivation towards study may also be divided into intrinsic motivation, that is, interest, or extrinsic motivation, for example, motivated towards the status, prestige or financial rewards of the course. Otto (1975) from his study and review of research concluded that intrinsic motivation was more important for academic

achievement than extrinsic motivation. This view would appear to be supported by a finding of Power et al. (1986), namely, that of the specific reasons given for withdrawal, students gave the factor "course not interesting" the highest percentage of "very important" responses.

In conflict with the finding of Otto (1975) is that of Beswick et al. (1983) who investigated a number of affective or attitudinal factors in relation to discontinuation of tertiary study in Victoria. They found that students who discontinued tertiary education, particularly those from the University, were more intrinsically and less extrinsically motivated in their reasons for gaining a tertiary qualification than were those students who persisted with tertiary education. Beswick et al. suggested that changing economic climates may be responsible for extrinsic rewards being the stronger factor in determining retention in tertiary education.

2.5 Ethnicity and Labour Market Experience

Having covered the research into the participation and performance of different ethnic groups in relation to secondary and tertiary education in the previous sections, it is appropriate to mention research that has investigated the labour market experience of these groups. Such research indicates whether or not the educational achievements of second generation immigrants are translated into success in the labour market in line with the population as a whole.

In looking at the labour force experience of both first and second generation immigrants in Australia, the main areas dealt with are type of occupation held, level of income, and incidence of unemployment. Along with comparisons made with the Australian born and those with Australian born parents, intergenerational shifts in occupational status and income levels between first and second generation immigrants are investigated.

2.5.1 Ethnicity and Occupational Status

First Generation Immigrants

As far as first-generation immigrants are concerned, the research shows that these people were much more heavily concentrated in 'blue collar' occupations than the Australian born (Rowland, 1982; Wood and Hugo, 1984; Burnley, 1986; Evans and

Kelly, 1986; Castles et al., 1988; Jones, 1988 & 1989; Foster and Lyle, 1991). This may be primarily explained by Australia's past immigration policies. For example, around 60 % of new arrivals to Australia in the 1960's were semi-skilled or unskilled. Although this proportion had fallen over time to under 40 % in the early 1980's (Jones, 1988 & 1989), it was still greater than the proportion of Australian born semi-skilled or unskilled workers.

Table 2.25, taken from Wood and Hugo (1984, p. 30) who used Australian Bureau of Statistics 1981 Census data, clearly shows that the Australian born generally had the highest proportion in the professional or technical categories, and the lowest proportion in the tradesmen, process and production categories compared to first generation immigrants, the major exception being the Asian born. Again with the exception of the Asian born, if the first-generation immigrants are divided into those from English speaking countries and those from non-English speaking countries, it is clear that the former had much greater proportions in the professional and technical categories whilst having much lower proportions in the blue collar occupations. Castles et al. (1988, pp. 13–15) found that the situation is even worse for immigrant women from non-English speaking backgrounds, these people being dramatically over-represented in manufacturing occupations and under-represented in the other occupational groups.

Looking specifically at those born in a non-English speaking country, Wood and Hugo (1984) found that those from southern and eastern Europe, Malta and the Middle East clearly had, on average, the lowest occupation levels whilst those from northern Europe and Asia were in the higher occupation levels. Even when compared to those from English speaking countries (including Australia), the Asian born had the highest proportion in the professional and technical occupations and the lowest proportion in the tradesmen, process and production categories, this ethnic group thus generally having the highest occupation status of all. The cause of the greater occupational status of the Asian born can be attributed mainly to Australia's strong educational selectivity of Asian immigrants (Wood and Hugo, 1984, p. 32.).

The number of years of schooling, qualifications and labour force experience affect the job status of Australian workers. The greater the number of years of schooling, the greater number of qualifications or the greater amount of labour force experience, all positively correlate with greater occupational status. In the investigation

of first generation immigrants' labour force experience in Australia, Jones (1988, 1989) controlled for immigrants' schooling, qualifications and labour force experience. The data used were from the Australian Bureau of Statistic's Supplementary Survey No. 4 to the 1982 Family Survey. The results revealed three broad findings. Firstly, schooling obtained overseas counted for less than Australian schooling; secondly, pre-migration labour force experience was heavily discounted in the Australian labour market; and thirdly, over and beyond these general processes, migrants from some countries got jobs with significantly lower status than Australian born persons with similar qualifications and experience (Jones, 1988, p. 11). Those identified as being most disadvantaged in these regards were migrants originating from southern and eastern Europe, the Middle East and Asia.

More recent studies by Holton and Lampugnani (1989) and Fincher and Webber (1991) support the findings of Jones (1988, 1989). Holton and Lampugnani (1989) found that only a third of their sample of first generation non-English speaking background immigrants with post-secondary qualifications found employment in line with their skills obtained overseas. In a study of the post-arrival labour market experience of 272 Greek, Yugoslav and Vietnamese born workers in the manufacturing industry, Fincher and Webber (1991) found that regardless of qualifications, the initial job for almost every person in the sample was a low skilled one. Further, subsequent mobility rates across the sample were very low.

Using the Australian Bureau of Statistic's public-use sample from the 1981 Census, Evans and Kelly (1986) also investigated whether immigrants were still disadvantaged in the Australian labour market after controlling for education and labour force experience. In comparing educational attainment and occupational status, they found that only highly educated Mediterraneans who were educated overseas suffered from a reduced occupational 'payoff' to their education. All other immigrants, including those from northwestern and eastern Europe, Asia, and those from Anglophone countries, received the same occupational status benefits from their education as did the Australian born (Evans and Kelly, 1986, p. 203). In explaining the apparent disadvantage experienced by Mediterraneans, Evans and Kelly (1986, p. 203) stated:

> This pattern of disadvantage is not consistent with an interpretation stressing ethnic discrimination or devaluation of foreign qualifications. Instead, it seems likely to reflect lower quality of schooling in the Mediterranean region, particularly in secondary school. Further, some direct

evidence on the quality of schooling lends credence to this interpretation.

The direct evidence on the quality of schooling that was referred to was a Science Survey conducted by the International Association for the Evaluation of Achievement. A key Mediterranean country, Italy, participated in the study. The typical Italian student scored substantially lower in standardised science tests than the typical student from Australia, England, West Germany, Netherlands or Hungary. The gap in achievement was also found to widen during secondary schooling (Evans and Kelly, 1986, pp. 197–8).

From First to Second Generation Immigrants

Research on the occupational status of second generation immigrants generally concludes that, on the whole, these people do as well as longer established Australians (Burnley, 1986; Evans and Kelly, 1986; Kelly et al. 1986; and Jones, 1988 & 1989). Burnley (1986, p. 79), for example, concluded that '... there was virtually full occupational convergence between groups and the host society in the second generation.'

Table 2.25 shows that the occupational status of second generation immigrants from English speaking countries is much the same as for the Australian born and virtually no different to the status of the first generation. However, within the non-English speaking groups, substantial intergenerational occupational upward mobility is to be found. The most striking mobility is to be found amongst the Mediterranean groups. For the Greek population, 11.6 % of the second generation had professional or technical occupations compared to only 1.5 % of the first generation. Similarly, the respective proportions of the first and second generations who held a professional or technical occupation for the Italians were 3.4 % and 10.0 %, and for the Yugoslavs, 3.2 % and 13.1 % (table 2.25). Substantial intergenerational increases in the proportions of each of these ethnic groups in the clerical occupation category also took place, whilst the proportions in the tradesmen, process or production categories generally halfed.

Burnley (1986, p. 80) argued that the:

> Intergenerational occupational mobility, or convergence, on the scale shown by the second generation Greeks, Italians and Yugoslavs may be explained in part by their parents' motivations for migration to Australia. Economic betterment for themselves, and *their children* were primary goals. The majority of Greeks and Italians formed their families in Australia, and they

Table 2.25: Australia: Occupational status according to birthplace of parents 1981 (percentage distribution).

Birthplace of Parents	Occupational Status (Percent)															
	Professional Technical		Administrative Executive		Clerical		Sales		Transport Communication		Tradesmen Process & Production		Service Sport Recreation		Unemployed	
	Generation*															
	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}	1^{st}	2^{nd}
Australia	13.4	13.5	4.9	4.9	17.8	17.3	8.3	8.1	4.9	5.0	23.6	23.6	7.7	7.7	5.6	5.4
U.K. & Eire	14.3	14.5	5.9	6.3	16.9	18.5	7.7	8.6	4.0	4.8	28.5	22.1	9.5	7.9	6.8	4.7
New Zealand	14.8	14.9	4.9	6.7	15.9	18.0	8.4	9.6	3.5	3.5	26.4	18.6	10.7	8.7	7.1	6.1
Germany	10.5	11.8	7.6	2.7	15.2	11.8	6.5	8.8	3.3	3.8	31.8	28.2	10.7	6.9	5.9	13.7
Netherlands	11.1	14.9	9.2	1.2	14.5	17.1	7.1	9.5	3.2	1.8	33.8	27.4	8.0	8.2	4.8	10.4
Poland	9.1	20.3	6.4	2.6	9.1	22.8	6.8	8.2	4.1	4.7	35.5	19.0	11.5	6.9	7.4	8.6
Greece	1.5	11.6	4.2	5.8	4.8	21.3	13.8	11.6	3.1	1.9	47.1	20.9	11.5	6.6	6.4	8.9
Italy	3.4	10.0	4.2	2.6	7.1	20.1	6.0	11.6	3.5	2.7	51.3	25.5	9.0	6.2	3.8	7.7
Malta	4.6	4.8	1.1	1.8	7.9	13.8	3.8	7.2	4.3	4.8	51.6	40.7	11.4	6.0	4.9	10.2
Yugoslavia	3.2	13.1	1.7	1.7	5.0	19.9	3.6	7.4	2.7	2.8	58.6	25.0	8.9	7.4	8.2	14.2
Middle East	2.7	12.7	3.7	4.8	6.8	19.8	8.5	15.9	4.2	4.0	47.8	15.1	6.8	6.3	12.7	9.5
Asia	20.6	18.6	4.9	4.0	17.0	17.1	4.5	10.1	2.9	3.5	22.2	23.1	10.4	12.1	10.3	6.5

Source: Wood & Hugo (1984, p. 30.). ABS 1981 Census of Population and Housing One Percent Sample Tape.

* 1^{st} generation defined as persons born overseas, 2^{nd} generation as persons with at least one parent born overseas.

> migrated to do this. Motivations of parents and their children out-weighed the societal constraints, including discrimination.

Burnley also mentioned that the second generation occupational mobility of Greeks, Italians and Yugoslavs may have been influenced by the tendency for children (even in ethnic concentrations) to communicate in English (a finding of Smolicz and Harris (1976)).

As Wood and Hugo (1984) point out, although there has been considerable occupational upward mobility for southern Europeans, inspection of the proportions in the professional or technical occupations compared to long standing Australians indicates that complete equality with longer standing Australians has yet to be reached.

The Middle East ethnic group exhibited similar intergenerational occupational mobility as the southern Europeans with an even greater shift away from manual labour into white collar occupations. Although not to the same degree as the southern Europeans, the Dutch and Polish groups also exhibited strong occupational upward mobility, enough so for the second generation Dutch and Polish to have greater proportions in the professional and technical occupations than the Australian born with Australian born parents. The Maltese showed only a small degree of intergenerational occupational upward mobility, with a decrease in the proportion in the tradesmen, process and production category and an increase in the proportions in the clerical and sales categories. Both the German and Asian groups showed little intergenerational occupational status movement.

On the whole, Evans and Kelly (1986) concluded that second generation immigrants do as well as, and perhaps better, than longer standing Australians insofar as occupational status is concerned.

2.5.2 Ethnicity and Income Differentials

A number of studies in the 1980's and 1990's have compared the income position of first, second and higher generation immigrants in Australia. Among them are the studies of Wood and Hugo (1984), Mistilis (1985), Chiswick and Miller (1985), Kelly et al. (1986), Beggs and Chapman (1988a), Chapman (1991), Jones (1988, 1989), and Flatau and Hemmings (1991).

Wood and Hugo (1984), using 1981 Census data, cross-tabulated first and second generation immigrants of selected origins by income groupings. Although this

analysis did not take into account the age difference between the first and second generations, nor take into account educational background or labour force experience, it nevertheless showed that for just over half of the immigrant groups, a greater proportion of the second generation were in the highest income bracket than the first generation. This same proportion also applied when only the non-English speaking immigrant origin groups were considered.

Also making use of 1981 Census data, Chiswick and Miller (1985) examined further income differences between generations of immigrants and the Australian born. They used data on men aged 25 to 64 years in 1981 who reported a positive usual weekly income. Unlike Wood and Hugo (1984), Chiswick and Miller controlled for a range of variables that could impact on income such as age, education, labour market experience, language spoken at home and period of residence in Australia. Their results indicated that, overall, first generation immigrants had 5 % lower incomes than the Australian born and 7 % lower incomes with other things the same. Other things the same, immigrants from New Zealand were found to have the highest incomes and those from southern Europe and the Middle East the lowest. However, the incomes of first generation immigrants, particularly those from non-English speaking countries, were found to increase with their duration of residence, other things the same. Thus the importance of income differentials decline the longer the immigrant resides in Australia.

Years of pre-immigration labour market experience and schooling were found to have a similar partial effect on income for immigrants from English speaking countries as for the native born but a smaller partial effect for those from non-English speaking countries. This finding is echoed by Kelly et al. (1986) and Jones (1988, 1989) who both found that first generation immigrants received a lower rate of return to their education and labour market experience than the Australian born, particularly Mediterranean migrants. Chiswick and Miller suggest that differences in the ability to transfer international skills are responsible for this outcome.

The role of education on non-English speaking background immigrant male wages in Australia was specifically investigated by Chapman (1991) using data on 821 immigrants and 498 Australian born persons collected for the Office of Multicultural Affairs in late 1988 and early 1989. Chapman (1991, p. 18) summarised his findings as follows:

> ...overseas primary and secondary schooling, and the holding of overseas certificates and diplomas, are rewarded at a much lower rate than Australian education of ostensibly the same types; immigrant returns to domestic education are about the same as those experienced by the Australian-born; and the receipt of domestic education is associated with increases in the market value of overseas primary and secondary schooling.

Three possible explanations for the lower returns to overseas education were put forth by Chapman (1991): (i) employers are risk-averse and uninformed about the value of overseas education; (ii) education has a country-specific dimension, implying that some skills are difficult to transfer internationally (this being the view of Chiswick and Miller (1985)); and (iii), overseas education is inferior to Australian education (this being the view of Evans and Kelly (1986) in explaining the low pay-off in Australia for Mediterranean education).

Language spoken at home was another variable used by Chiswick and Miller (1985). They found that:

> Among those from non-English speaking countries, incomes are about 5 per cent lower if a language other than English is spoken in the home. Moreover, if the individual indicated a lack of proficiency in his use of the English language incomes are lower by another 7 per cent.

This finding might further explain why pre-immigration labour market experience and schooling appeared to be discounted in the Australian labour market, this being a conclusion reached by Kelly et al. (1986, p. 118).

In regard to second generation immigrants, Chiswick and Miller (1985) specified no particular ethnic groups but found that overall, second generation immigrants had 4 % higher incomes than the Australian born generally but with other things the same, this fell to a statistically insignificant 1 %.

Mistilis (1985), using the Australian Bureau of Statistic's 1 per cent sample from the 1981 Census, investigated income differentials between second and higher generation immigrants. Only persons aged 18 years or older who reported their income and who were not attending a tertiary institution full-time were considered. Age was controlled for but education, labour force experience and gender were not. Mistilis used fathers' birthplaces to define the ethnicity of second generation groups. It was found that most second generation groups had mean age adjusted incomes greater than the control group comprising Australian born persons whose father was born in Australia.

Mistilis (1985) found that all second generation groups originating from English speaking countries had mean age adjusted incomes greater than the control group: New Zealanders had a 6 % higher income; British and Irish, 3 %; and other English speaking (comprising Canada, United States of America and South Africa (n=48)) 21 %. Non-English speaking origin second generation groups found to have greater mean incomes than the control group were: Greeks, 7 % higher; Germans, 3 %; and Polish, 3 %. The only two groups found to have lower mean age adjusted incomes than the control group were second generation Italians and Dutch with 3 % and 10 % lower incomes respectively.

2.5.3 Ethnicity and the Incidence of Unemployment

First Generation Immigrants and Unemployment

The research that has been carried out on the unemployment experience of first generation immigrants in Australia has consistently shown that the unemployment rate for these people is higher than for the Australian born (Wood and Hugo (1984), Withers and Pope (1985), Inglis and Stromback (1986), Jones (1988, 1989), Beggs and Chapman (1988b), Wooden and Robertson (1989), Wooden (1990) and Foster et al. (1991)). First generation immigrant women, recent arrivals and those from non-English speaking countries have been found to be the groups most likely to be unemployed.

Wooden (1990), using Australian Bureau of Statistics Labour Force data and unpublished data, cross-tabulated age groups with birthplace in his investigation of migrant unemployment rates. He found that unemployment rates for migrants from English speaking countries were generally slightly higher than for the Australian born. Migrants from non-English speaking countries, however, had unemployment rates up to 10 % higher than the Australian born in the case of 18 to 24 year old males, and were typically about 4 % to 5 % higher for the other age groups.

Using multivariate statistical techniques on data from the Australian Bureau of Statistic's Characteristics of Migrants Survey[17] and the 1986 Census, Wooden (1990) investigated the effects of birthplace and language proficiency, education, and period

[17]Conducted in March 1987 as a supplement to the regular monthly labour force survey, this survey was restricted to persons born overseas who arrived in Australia on a permanent basis after 1960 and were aged 18 years or over at the time.

of residence on the labour force status of first generation migrants. As mentioned earlier, Wooden found that non-English speaking background migrants are more likely to be unemployed than English speaking background migrants. It was found further that southern European and Asian migrants did far less well even when compared with other non-English speaking migrants. Wooden suggested that English language speaking ability may be responsible for these differences.

As the 1986 Census asked persons to assess their own English language speaking ability, Wooden (1990) was able to control for same in his investigation of migrant unemployment. Using 1986 Census data, Wooden found that overall, persons who spoke English poorly or not at all had a probability of unemployment about 15% higher in the case of males and 8% higher in the case of females, when compared to the Australian born control group. However, when English language speaking ability was controlled for, only Asian migrants emerged as significantly more likely to be susceptible to unemployment. In fact, male migrants from the British Isles and New Zealand were found to be worse off regarding unemployment than most other migrant groups when language ability was controlled for. Wooden suggested that this may be due to the greater motivation of some ethnic groups. He attributed the higher probability of unemployment for Asians to the large component of Vietnamese refugees in the Asian population.

Regarding education, Wooden's (1990, p. 30) research revealed:

> While it is found that at all levels of education the Australian born do better than the overseas born (which contrasts with Beggs and Chapman [1988a] who actually found the overseas born less likely to be in unemployment at low levels of education), there is some evidence to support the hypothesis that post-school qualifications gained overseas do not have as large an effect on employability as do the same level of qualifications obtained in Australia, but only for migrants from a non-English speaking background and only for males.

The research of Beggs and Chapman (1988b) and Wooden and Robertson (1989) found further that although higher levels of education are associated with lower unemployment for both the Australian and overseas born persons, the relative margin of unemployment of the overseas born increases with higher education, particularly for non-English speaking background immigrants. This finding parallels that of Evans and Kelly (1986) who found that only highly educated Mediterraneans who were educated overseas suffered a reduced occupational payoff to their education. Fos-

ter et al. (1991) also found that the largest gap in unemployment rates between non-English speaking born persons and those born in Australia or another English speaking country was for those holding a degree. Of those aged 15 to 64 years in 1989 and holding a degree, only 1.7 % of those born in Australia were unemployed compared with 2.4 % and 5.4 % for those born in a non-English speaking country and those born in an overseas English speaking country respectively (Foster et al., 1991, p. 85).

Length of residence in Australia was found by Wooden (1990) to be one of the most important variables regarding migrant unemployment rates. He found that the probability of migrants being unemployed, particularly for non-English speaking background migrants, fell dramatically within the first five years of residence and thereafter slowly converged to the rate of unemployment for the Australian born. For one group of migrants, the southern Europeans, the likelihood of being unemployed was actually lower than for the Australian born after five to nine years of residence. Wooden's finding on the effect of period of residence on probability of unemployment parallels that of Chiswick and Miller (1985) who found that, other things the same, migrants' incomes rose with length of residence.

Second Generation Immigrants and Unemployment

Far less research on the incidence of employment for second generation immigrants in Australia has been conducted than on first generation immigrants. The work of Wood and Hugo (1984) and Jones (1988, 1989) provide exceptions. Wood and Hugo (1984), using 1981 Census data, crosstabulated unemployment rates by first and second generations for specific birthplace groups (see table 2.25 given earlier). With the exception of second generation people originating from the United Kingdom or Eire, all second generation immigrant groups were found to have unemployment rates greater than higher generation Australians. Further, non-English speaking second generation immigrant groups also had unemployment rates greater than their respective first generation groups, the two exceptions being the second generation Middle Eastern and Asian groups. Wood and Hugo attributed this to the younger age profile of the second generation and to the higher than average youth unemployment rates in 1981.

Jones (1988, 1989), using data from the Australian Bureau of Statistic's 1982

Family Survey, also investigated the unemployment experience of second generation immigrants. He found differences in unemployment rates to occur within the second generation. Those with fathers born in southern Europe were found to have significantly higher rates of unemployment than other groups, a finding which was not explained by controlling for either educational attainment or labour force experience. Jones speculated that southern Europeans might come disproportionately from families where the father ran his own business and that some unemployed men might be working as unpaid helpers but were reported as unemployed. However, further analysis gave little support to this speculation.

Chapter 3

Methodology

The types of material used for analysis in this thesis were of two main types namely, data from a questionnaire survey and questionnaire respondents' academic records.

The main advantage for using a questionnaire survey for the collection of data is that a relatively large amount of information can be collected efficiently from a large population. Data from a large population is desirable as the larger the sample population, the greater the chances it will be an accurate representation of the total population.

The main disadvantage of questionnaire surveys is that because of the large volume of information, it has to be in a form which allows it to be readily analysed. This has the effect of restricting the responses that can be given to questions in the questionnaire, that is, they are of a 'closed' format. Thus, for example, in trying to determine factors which were important in influencing a student's choice of course, a list of possibilities drawn up by the *researcher* are given to which the respondent must respond, say, 'Important' or 'Not Important'. If this information had been sought in an 'open-ended' manner, that is, allowing the respondents to freely express what they considered to be important factors in choosing their course, it may be that one would be given a more detailed and accurate picture of factors which influence a student's decision making process than what could be attained from a 'closed question' approach. However, when dealing with a large sample population, 'closed question' data are able to be more efficiently collected and analysed than 'open-ended question' data.

In order to obtain data on what students hoped to gain from their studies, an open ended question was asked in the final questionnaire, a closed question format

being considered inappropriate. The data gained from this question could not be readily coded for analysis as the rest of the questionnaire data and thus required a different method of analysis which will be described later.

3.1 The Questionnaire Survey

3.1.1 Development of the Pilot Study Questionnaire Form

The main objectives of the questionnaire survey were to establish students' socio-economic and educational background, educational aspirations, factors directly influencing their choice of course, linguistic and ethnic background, perception of ethnic identity and degree of social integration. The data so obtained was related to students' academic records information to establish which factors were most strongly associated with high or low academic achievement.

With these above factors taken into consideration, an initial questionnaire form was developed (see appendix A). Initially, a number of questionnaires from other studies which sought similar information in some areas were consulted (Anderson et al., 1978; Harris, 1976; Jordan, 1966; Piesiewicz, 1982; Power et al., 1985 & 1986; and Williams, 1982). Some questions from these questionnaires were taken and modified for use in the pilot study questionnaire.

As the data from the questionnaire would be related to the academic records of the respondents, some form of identification of the respondent had to be sought to enable this. The most confidential and efficient way to do this was via the 'student identification number' issued to each student by the university. Thus students were asked to supply this information. Due to the confidential nature of this information, a statement of the confidentiality of all information supplied by students in the survey was given on the frontispiece of the questionnaire. An example of how to answer most of the questions was also included on the frontispiece. The majority of questions were designed so that respondents could circle the most appropriate response to each question asked, these responses being numeric to facilitate computer analysis.

Questions 1, 2, 3, 16, 17 and 18 (see appendix 1) established the general facts of students' sex, year of birth, year of arrival to Australia (if born outside Australia), type of accommodation, family size and birth order, and whether the student had any dependent children or not.

The socio-economic and educational background of respondents were established by asking respondents to classify their parents' occupation and education levels (questions 5 and 6) and to give their own education level, type of secondary school attended and sources of financial support (questions 6, 7 and 19).

A series of questions were asked regarding the student's course. Which course enrolled for, whether enrolled part or full-time, entry qualification to current course, and years between the gaining of the entry qualification and commencing current studies were all sought (questions 8, 9 and 11). Questions 9 and 10 sought further information related to full/part-time enrolment, namely, whether the provision of after hours classes was an important factor for choosing a course, or if a part-time student, whether or not they had previously been enrolled full-time and if so, to give a reason for the change of status to part-time. Question 10 determined whether or not a student would have considered enrolling in another course if after-hours classes were provided in that course.

Questions 12 and 15 related to students' aspirations. Whether or not a students' undergraduate course was their first preference course was established in question 12 whilst question 15 determined the highest education level that the student planned to achieve.

A list of factors were provided in question 13 and students asked to indicate which were important in influencing their choice of course. Students were also given the opportunity to mention any other important factors not supplied in the list given. In question 14 students were asked to respond, on a scale from true to false, to a series of general personal statements about their life and course at university.

The linguistic background of students was sought in questions 20, 21 and 22. Question 20 determined to what extent a language other than English was regularly used with the student's family and friends considered separately. Students were also asked to specify any non-English languages so used. The students' own perception of their ability to read and write in English and their main non-English language was sought in question 21. Which languages had been (or were being) studied at primary school, secondary school and university level were sought in question 22.

Information regarding students' ethnicity were sought in questions 4 and 23. Question 4 established the country of birth of students and their parents whilst question 23 asked for the student's own perception of their ethnic identity. In order

to gauge the extent of social integration of university students, question 24 asked respondents to give the number of friends (out of their three closest) who were from a 'British or Anglo-Celtic Australian background', 'Your own ethnic background (if other than British/Anglo-Celtic)', or 'Minority cultural background other than your own'.

Finally, an open-ended question was included in the questionnaire, question 25, which asked students to write about what they considered to be the benefits and difficulties of studying at university.

The resulting questionnaire form (appendix 1) was then used in a pilot study to identify possible problem areas such as inadequate wording of questions or poor response rates to particular questions. The problems so identified were then taken into account in developing the final questionnaire form.

3.1.2 The Pilot Study and Development of the Final Questionnaire Form

Towards the end of the 1989 academic year, the pilot study questionnaire form was distributed to students enrolled in the post-graduate Diploma of Education (now Graduate Diploma in Education) at the University of Adelaide. The questionnaires were distributed at lectures and seminars and students were asked to complete them before leaving same. A total of 54 questionnaires were returned.

The first factor to be taken into account in the formation of the final questionnaire form (appendix 2) was the population on which it would be used. It was decided that the questionnaire would be distributed to students who attended orientation week lectures for the first year subjects English I, Chemistry I and Economics I. The students were asked to complete and return the questionnaire before leaving these lectures. The subjects English I, Chemistry I and Economics I were chosen as they had a relatively large proportion of first year students, whilst at the same time gave a sample representing those from the sciences, humanities and economics/commerce fields of study. The vast majority of the sample comprising of first year students allowed for two years of academic results of these students to be considered within the time scale of the study. Also, this method of distributing and receiving the questionnaires was used as it was considered more efficient than, say, mailing questionnaires out to students and then waiting for responses and sending reminders.

As it was anticipated that there would be little time for students to complete the questionnaire at the end of orientation lectures, the pilot study questionnaire form was reduced in length. Question 9 was reduced to ask merely whether enrolment was part or full-time and question 7 was reduced in that students would no longer be asked to specify the name and place of the last school or college that they attended. Although the information asked in question 14 was considered important, the question was only appropriate for those students who had already completed some university studies. Thus as the majority of the sample would consist of new university students, this question was deleted. For much the same reason, question 8 was reduced to ask only for the course enrolled. Other questions deleted were questions 10, 11 (b) and 21 (a).

To further shorten the questionnaire, the format of questions 4, 5 and 22 were changed from a 'self-coding' format where the respondent had to circle an appropriate response from a list given, to a format whereby the respondent wrote a response which later had to be coded by the researcher.

The pilot study revealed some inadequacies in the way certain questions were presented. The category 'Degree' was added to the list of responses for question 11 (a) (from the pilot study questionnaire) which asked what the student's entry qualification was to his/her present course. Response difficulties to question 24 were revealed in the pilot survey, namely, that a significant portion of students (13 %) gave only a tick or cross as a response rather than a number. In order to try and overcome this problem, the main question was reworded from "How many are ...", to "What number (i.e. 0, 1, 2 or 3) are of ...." Finally, an additional response to question 13 was added, namely, 'Content of course'.

Appendix 2 gives the final questionnaire form used in the survey proper after the above alterations were completed and the questions renumbered.

3.1.3 Application of the Questionnaire and Recoding of Data

As mentioned earlier, the questionnaire was distributed to students who attended English I, Chemistry I and Economics I orientation lectures conducted at the beginning of the 1990 academic year. A total of 818 questionnaires were returned, 294 from English I students, 384 from Chemistry I students and 140 from Economics I students. Of the total sample of questionnaires returned, just over three quarters,

76 %, included the student identification number thus allowing these questionnaire responses to be linked with academic records.

On return, the questionnaires were first scanned to check for errors which would cause coding difficulties, for example, the circling of more than one 'highest education level completed' in question 8. Questions requiring a written response, such as country of birth or parent's occupation, were then coded. The computer data file was then created allowing computer analysis of the data.

The responses to the countries of birth questions (4, 5 and 6) were initially coded as the students themselves responded thus allowing later regrouping of countries into broader categories. Similarly, questions asking for languages used and languages studied (20 (a) and 21) and ethnic identity (22), were coded as responded to thus allowing for later regroupings.

Question 7, asking for mothers' and fathers' occupations, was coded into the Australian Bureau of Statistic's census occupation categories thus allowing for comparison with ABS population statistics. Although the question was designed to eliminate the categories 'Retired', 'Unemployed' and 'Deceased', as these categories were still used by a number of respondents they were also coded.

A number of questions which had a large range of responses were recoded. Appendix D contains the recoding tables. Questions 4, 5 and 6, asking for students' and parents' countries of birth, were recoded into five categories principally on the basis of whether the main language spoken in the country in question was English or not. The five categories were 'Australia', 'Other English speaking countries', 'European non-English speaking countries', 'Asian language countries' and 'Other non-English speaking countries'.

The languages other than English used with family and friends as specified in question 20 (a) were recoded into the categories 'Non-English European', 'Asian' and 'Other'. Question 21 responses, languages studied at primary school, secondary school and university, were recoded as for question 20 (a) with the additional category 'English'. The responses to question 22, dealing with students' perceived ethnic identity, were recoded into the categories 'Anglo-Celtic', 'Non-Anglo-Celtic European', 'Asian', 'Other (including overseas students)', 'Mixed' and 'None'.

The statistical computer package 'Statistical Package for the Social Sciences' (S. P. S. S.) was used to analyse the data file created.

3.2 The Collection and Use of Academic Records

Academic achievement data could only be obtained for those students who gave their genuine student identification number, these students representing 70.3 % (575) of the whole sample. The academic achievement data of students' study undertaken in 1990 was obtained in the form of academic transcripts. The academic transcripts gave the course(s) that the student was enrolled in, the subjects enrolled in and the results obtained for the subjects. The possible results for a subject as given on the academic transcripts were Distinction, Credit, Pass, Pass Division I, Pass Division II, Fail, Incomplete Fail, Withdrawal with fail, and Withdrawal without fail. For those subjects without an 'incomplete fail' or 'withdrawal' result, a specific subject mark (between 0 and 100) was also given.

The information given on the academic transcripts was coded and added to the data file for the questionnaire survey. All students from the questionnaire survey were identified as falling into three main categories, namely, those who were enrolled at the University of Adelaide prior to 1990, those who commenced study at the University of Adelaide in 1990, and those who did not give their student number in the questionnaire survey.

Each subject at the University of Adelaide is worth a number of 'points', with a total years enrolment of 24 points constituting a full year's load. The points value of a single subject ranged from 1.5 points to 12 points. Most first year science, arts and economics faculty subjects were worth 3 or 6 points. For each student for whom an academic record was available, the number of points for 1990 studies for which they received a distinction, credit, pass (pass, pass division I, or pass division II all being considered as just 'pass'), fail, incomplete fail, withdrawal without fail, or withdrawal with fail, were each added to the initial questionnaire data file. From this information, student loads, grade point averages and progression rates were calculated and this information cross-analysed with the questionnaire data.

3.2.1 Student Progression Ratio and Mean Withdrawal-not-fail Percentage

In the study of 1985 entrants to higher education institutions in South Australia by Power et al. (1987), a Student Progression Ratio was used to compare the academic

achievement of various groups of students. This ratio was also used as a measure of academic achievement of students in this study. The Student Progression Ratio (SPR) is the ratio of the number of subject points passed by a student to the number of subject points enrolled. Thus an SPR of 0.73, say, can be interpreted as implying 73 % of enrolled subjects were passed by students.

In a similar manner, the 'Withdrawal-not-fail' percentage (WNF) is the percentage of total enrolled subject points which resulted in a withdrawal without fail classification. A WNF percentage of 25, say, would mean withdrawal without fail from a quarter of a year's load.

3.2.2 Construction of the Grade Point Average

A Grade Point Average (GPA) was constructed for further analysis of academic achievement. For each student, the Grade Point Average (GPA) is equal to the weighted mean of the student's 1990 subject marks. Where a subject had an 'incomplete fail' or 'withdrawal with fail' result, the subject mark was considered as 0. Subjects with a 'withdrawn without fail' result were ignored in calculating the GPA.

For individual subjects, a mark of 0 to 49 corresponded to a fail, 50 to 64 a pass, 65 to 74 a credit, and 75 to 100 a distinction. Thus a GPA falling in the range 0 to 49 can be taken as an overall fail standard, 50 to 64 of pass standard, 65 to 74 credit standard, and 75 to 100 as of overall distinction standard.

3.3 Analysis of Qualitative Data

This section describes the methodology behind the analysis of data from the open ended question 'What do you hope to gain from your studies at the university ?' in the questionnaire (appendix B). A total of 687 (84 %) students wrote a response to this question.

Initially, the responses were read a number of times to obtain a number of broad categories under which the responses fell. The responses were found to fall under four categories, namely, career and financially related gains, social and cultural gains, self improvement gains, and other gains directly attributable to the course of study at university. Under each of these headings, students' responses were further categorised. For example, under the 'career and financial gains' heading were those students who

purely wanted to get a high paying and prestigious occupation whilst other students placed a greater importance on gaining an occupation which would be intrinsically more satisfying, rewarding or enjoyable.

The number of students responding under each main and sub heading was calculated to find the most popular overall responses and thus the general picture of why students were undertaking a higher education and what the student population in general hoped to gain from studying at university. This in turn indicated students' perceptions of what a university is all about and what its role in the wider community is.

Chapter 4

Analysis of Questionnaire Survey Responses

This chapter is concerned with the analysis of the responses to the questionnaire survey before they were related to academic achievement data. Much of the data will be compared with Australian Bureau of Statistics 1986 Census data to indicate which groups of society are under or over-represented in the University of Adelaide student population. Also, comparisons will be made with data on 1985 entrants to higher education institutions in South Australia compiled by Power et al. (1985), and data on 1980 entrants to Australian universities compiled by Williams (1982). In doing so, it will be revealed whether or not the social makeup of University of Adelaide student entrants has changed over the past five to ten years. This in turn will indicate whether or not programmes implemented to overcome inequities in higher education are having the desired impact.

Tables of the responses to questions can be found in appendix C. It should be noted that the percentages used in the tabling of data from the survey are *valid* percentages, that is, those based on the number of valid responses.

Many comparisons were made with the results of Power et al. (1985) from a study of 1985 entrants to higher education institutions in South Australia. Some limitations of these comparisons need to be noted at the outset. Although the sample of this 1990 survey consists of students enrolled in first year level subjects, a small number of these students were not new entrants to the University thus making this sample type different from that of Power's which consisted wholly of new entrants. However, as the majority of students in the 1990 sample were new entrants, it was considered

worthwhile to make the comparisons. Another fundamental difference between the two studies was that Power's sample considered entrants to all undergraduate courses whereas in the present survey, over 95 % were enrolled in a science, arts or economics degree.

Various factors from the questionnaire survey were also inter-related to find, for example, whether or not higher education aspirations differ for those from different socio-economic or ethnic backgrounds.

The final section of this chapter contains the results of the analysis of the open ended question 'What do you hope to gain from your studies at the University ?'

4.1 Basic Findings of the Questionnaire Survey

4.1.1 Response Rates

As mentioned in chapter three, the questionnaires were distributed to students at orientation lectures to be completed and returned on leaving the lecture. As the number of students to whom a questionnaire was given could not be practically obtained, an exact response rate cannot be calculated. However, by comparing the number of returned questionnaires with the number of students who officially enrolled, approximate response rates can be calculated. Questionnaires were distributed at *all* orientation lectures for Chemistry I and English I only, thus response rates can only be calculated for these subjects. Response rates of those at the Chemistry and

Table 4.1: Response rates.

Subject	Response N	Enrolment N[1]	Response Rate (%)
English I	294	387	76.0
Chemistry I	384	525	73.1
Economics I	140	468	29.9[2]

[1]Source: *1990 Statistics*, University of Adelaide, 1990.
[2]Low due to questionnaires not being given at all orientation lectures for this subject.

English orientation lectures were generally quite high with around three quarters of students returning a questionnaire. As questionnaires were distributed at only two of the three orientation lectures for Economics I, a very rough response rate may be

obtained by comparing the number of responses with only two thirds of the actual enrolment number. This yields a response rate of around 50 %, somewhat lower than for the other subjects. This is most probably due to the Economics students having less time at the end of the lecture to complete the questionnaire compared with those at the English or Chemistry orientation lectures.

4.1.2 General Background Details of Respondents

Gender

Males represented 47.5 % of the survey sample. University statistics revealed, however, that 51.2 % of 1990 enrolments in English I, Chemistry I and Economics I were male.[1] This disparity is most probably due to females tending to be more co-operative than males when it comes to participation in questionnaire surveys of a voluntary nature.

Age

The majority of the sample, 55 %, were born in 1972 or later, that is, they were of age 17 years or less as at 1^{st} January 1990. At the other end of the scale, those aged 25 years or over as at 1^{st} January 1990 represented 11 % of the sample. The corresponding figures from the 1985 study of Power et al. (1985) for the University of Adelaide were 53 % and 14 % respectively. Although the differences are small, indications are that lower proportions of older students are entering than in 1985.

Semester Residence

The view that Adelaide University is very much a 'commuter' university is supported by the finding that only 7 % of respondents resided in a college or hall of residence whilst 67 % of respondents resided with their parents or relations during semester time. The other 26 % indicated other forms of residence such as boarding or sharing a house with friends. For 1985 entrants to the University of Adelaide, Power et al. found that 74 % resided with a parent, thus indicating a slight increase in the proportion of students living away from parents, despite the younger age of the 1990 sample.

[1]Source: *1990 Statistics*, University of Adelaide, 1990.

Earlier information available from the study by Williams (1982) indicated that about 80 % of students entering the University of Adelaide in 1980 resided with their parents, this proportion being larger than for the 1990 and 1985 findings.

Financial Support

Students were given a list of possible financial sources and asked to rate their degree of dependence on each one as a 'Major source', 'Minor source' or 'Not at all'. This response structure was the same as used by Power et al. (1985).

The majority of students, 55 %, relied on their parents/guardians as a major financial source. AUSTUDY was claimed to be a major financial source by only 25 %, with 63 % claiming to receive no AUSTUDY benefits at all. For 1985 entrants to the University of Adelaide, Power et al. also found that AUSTUDY (TEAS in 1985) was a major source for 25 %.

Regular full-time work was a major source for 7 % (51). Casual or part-time work was the second largest major source category at 31 %, whilst for 39 % it was a minor source. These figures indicate that over three quarters of students in the survey had paid employment as a major or minor financial source.

Williams (1982) had 'Only Support', 'Main Support','Some Support' and 'No Support' as response categories to a question on financial support in his study. For 1980 entrants to the University of Adelaide, he found that approximately 29 % had AUSTUDY (TEAS in 1980) as their 'Only Support' or 'Main Support', whilst about 58 % were in these categories regarding parental support. Although these figures are much the same as for the 1990 survey, a huge difference occurs when dependence on casual or part-time work is considered. Williams found that only 39 % of 1980 entrants relied at least in part on casual or part-time work compared with 70 % of those in the 1990 survey. This indicates that much greater proportions of students are now dividing time and attention between study and work than was the case ten years ago.

Dependent Children

Just under 6 % (45) of respondents claimed to have dependent children, 17 of these respondents being male, 27 female. Further, of these respondents, 5 males and 3 females were 21 years of age or less as at 1^{st} January 1990.

4.1.3 Socio-economic Background of Respondents

Parents' education and occupation levels were used to establish the socio-economic background of students. The results of the survey were compared with Australian Bureau of Statistics (ABS) data and the previous findings of Power et al. (1985) to gauge which sections of the community were over or under-represented at the university and if proportions of representation had changed over the past five years.

Parents' Education Levels

1986 South Australian Bureau of Statistics (ABS) Census data showed that only 9 % of all males aged 35–54 (this age range being most representative of students' fathers' ages) held a degree[2] compared with 36 % of students' fathers, as found by the survey (see table 4.2). At the other end of the scale, ABS data showed that 51 % of all males aged 35–54 had no post-secondary qualification compared with 41 % of fathers. Inbetween, ABS data showed that 40 % of 35–54 year old males had a trade certificate, post-secondary diploma or similar qualification compared to only 23 % of fathers. Clearly, the student population strongly over-represented those with a father holding a degree whilst those with a father holding a post-secondary qualification less than a degree, or having no post-secondary qualification at all, were under-represented.

To try and establish whether or not the socio-economic status level of the student body has changed over the last five years to more closely represent the wider population, the survey data can be compared with that of Power et al. (1985) (see table 4.3). In his study, it was found that 37 % of fathers of entrants to The University of Adelaide held a degree or higher qualification, whilst ABS 1981 Census data showed that 11 % of South Australian males aged 35–44 held a degree. Comparing the findings of Power with those of the 1990 survey results indicated that the degree of over-representation of students with highly educated fathers was much the same as it was five years ago.

For all Australian females aged 35–54, 1986 ABS census data showed that only 4 % held a degree, whilst 74 % had no post-secondary qualification compared with 27 % and 56 % found respectively by the survey for students' mothers. Inbetween,

[2]Source: ABS, *Census 86 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2494.0., p. 128.

Table 4.2: Percentage of parents in each education level.

		Degree or higher	Trade certificate, post-secondary diploma e.t.c.	No post-secondary qualification	Total
Father	1990 Survey	36	23	41	100
	S.A. Males Aged 35-54[1]	9	40	51	100
Mother	1990 Survey	27	17	56	100
	S.A. Females Aged 35-54[1]	4	22	74	100

[1]Source: ABS, *Census 86 – Cross-classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 6235.0, p. 128.

Table 4.3: Percentage of parents holding a degree.

Father				Mother			
1990 Survey	S.A. Males Aged 35-54[1]	1985 Entrants[2]	S.A. Males Aged 35-44[3]	1990 Survey	S.A. Females Aged 35-54[1]	1985 Entrants[2]	S.A. Females Aged 35-44[3]
36	9	37	11	27	4	18	8

[1]Source: ABS, *Census 86 – Cross-classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 6235.0, p. 128.
[2]Study by Power et al., *Access to Higher Education*, National Institute of Labour Studies, 1985.
[3]From Power et al., 1982 South Australian ABS data (Cat. No. 4010.0, table 4.44).

ABS data showed that 22 % of 35–54 year old females had a trade certificate, post-secondary diploma or similar qualification compared to only 17 % of mothers. Clearly, the student population strongly over-represented those with a highly educated mother whilst those with a mother with no post-secondary qualification were strongly under-represented. Those with mothers in the middle education level were also under-represented, though not to the same extent.

A different picture than that for fathers emerged when the change in the composition of the student body over the past five years was considered. For 1985 entrants to Adelaide University, Power et al. found that only 18 % had mothers with a degree or higher qualification compared with 27 % found in the present survey (table 4.3). The apparent rise in the proportion of students with mothers holding a degree or higher may be explained by a higher proportion of women generally holding a degree or higher qualification than in 1985. However, 1982 ABS data used by Power et al. showed that 7.6 % of South Australian females aged 35–44 held a degree or higher qualification, a figure *higher* than the 4.4 % of 35–54 year old females in the 1986 Census. Thus over the past five years, the over-representation of students with a mother holding a degree has notably increased.

On the whole, it would appear that from 1985, the relative proportion of students with a parent holding a degree or higher qualification has, if anything, increased.

Parents' Occupations

The responses to the 1990 survey parental occupation questions were coded into the major groups of the ABS 'Classification and Classified List of Occupations', as used by Power et al. (1985) and for the 1981 Census. Thus the 1990 survey data may be readily compared to that of Power et al. and 1981 Census data. Direct comparisons of 1990 survey occupation data cannot, however, be made directly with 1986 ABS South Australian Census data as a different classification of occupations was used for this census, namely, the 'Australian Standard Classification of Occupations.' The ABS pointed out that:

> ...it is not possible to map the new classification onto the old classification at a conceptual level because the philosophical basis of the two classifications are very different.[3]

[3]ABS, *Census 86 – Australian Standard Classification of Occupations/Classifications and Classified List of Occupations: Link*, Cat. No. 2182.0, p. 1.

For this reason, 1990 survey data will be compared with ABS 1981 South Australian Census data.[4]

The occupation categories used in the 1990 survey were re-grouped into three occupation levels as indicated in table 4.4. The 'upper' occupation level consisted of the professional, technical and administrative, managerial and executive categories, the 'middle' level contained clerical workers, sales related workers and those in the Armed Services (only one parent being in the Armed Services in the survey), and

Table 4.4: Groupings of ABS 1981 Census[1] and 1990 survey parental occupation categories.

Broad Grouping	1990 Survey Categories[2]/ ABS 1981 Census Categories
Upper	0. Professional, technical 1. Administrative, managerial, executive
Middle	2. Clerical workers 3. Sales workers 10. Members Armed Services
Lower	4. Farmers, fishermen e. t. c. 5. Miners, quarrymen e. t. c. 6. Transport, communication 7/8. Tradesmen e. t. c. 9. Service, sport, recreation e. t. c.

[1]Source: ABS, *Census 81 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2447.0, pp. 33–35.

[2]As the ABS data deals only with employed persons, the 1990 survey categories 'Home-based', 'Retired', 'Unemployed' and 'Deceased' were omitted for making comparisons with ABS data.

the 'lower' category which consisted of farming, mining, transport, communication, tradesmen and service, sport or recreation related occupations.

As the ABS occupation data dealt only with employed persons, the 1990 survey categories 'Home-based', 'Retired', 'Unemployed' and 'Deceased' were omitted for making comparisons with ABS data. This had the greatest impact on the data for students' mothers of whom 22 % were 'home-based' and thus not considered as employed for the purposes of making comparisons with ABS population figures.

[4]ABS, *Census 81 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2447.0., pp.32–35.

For all employed 35–54 year old males in South Australia in 1981, 26 % were in the upper, 14 % in the middle, and 61 % in the lower occupational categories

Table 4.5: Percentages of students' parents in each occupation level.

		Occupational Level[1]			Total	1985 Entrants Upper level[3]
		Upper	Middle	Lower		
Father	1990 Survey	61	11	28	100	67
	S.A. Males Aged 35-54[2]	26	14	61	101	
Mother	1990 Survey	49	34	17	100	57
	S.A. Females Aged 35-54[2]	22	36	42	100	

[1]Occupational Levels as given in table 4.4
[2]Source: ABS, *Census 81 – Cross-classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2447.0
[3]Study by Power et al., 1985, *Access to Higher Education*, National Institute of Labour Studies.
Note: ABS occupation data is for *employed* persons.

(see table 4.5). In comparison, 61 % of students' fathers had their present or last occupation in the upper category, 11 % in the middle, and about 28 % in the lower occupational level. Clearly, the student population strongly over-represented those with a father in the upper occupation category whilst those with a father in the lower occupation category were strongly under-represented. Those with a father in the middle occupation level were slightly under-represented.

Power et al. found that 67 % of 1985 entrants' fathers were in either the professional or managerial occupation categories compared to only 26 % of South Australian 35–54 year old males according to the 1981 census. Comparing this data with that of the survey (table 4.5) indicated that the degree of over-representation of students with a father in an upper level occupation had decreased from that of five years ago.

For all employed 35–54 year old females in South Australia in 1981, ABS data showed that 22 % were in the upper, 36 % in the middle, and 42 % in the lower occupation categories. The corresponding figures found by the survey were 49 %, 34 % and 17 %. Thus, as was found for student's fathers, those with a mother in the upper occupation category were strongly over-represented whilst those with a mother in the lower occupation category were strongly under-represented. Those with a mother in the middle occupation level were slightly under-represented.

For 1985 entrants, Power et al. found that 57 % of students' mothers were in the professional/managerial categories compared to 21 % of South Australian females aged 35–54 according to the 1981 Census (table 4.5). So although students with a mother in the upper occupation level were still over-represented in the university's student population, the degree of over-representation had decreased over the last five years.

These figures indicated that students with parents in the upper occupational categories were still very much over-represented in the student body, whilst those with parents in the lower occupational categories were strongly under-represented. Also, those with a parent in a clerical or sales related type occupation were also under-represented. However, comparing the 1990 findings with those of Power's 1985 data indicated that the degree of over-representation of the upper occupational groups had decreased over the past five years.

To sum up, students with more highly educated parents, or with parents in high status occupations, were still strongly over-represented in the university student population whilst those with parents with a low level of education or holding a low status occupation were under-represented. The degree of over-representation of those with highly educated parents had, if anything, increased over the past five years whilst the degree of over-representation of those with parents holding a high status occupation appeared to have decreased.

4.1.4 Respondents' Educational Background

Respondents' Secondary Schooling

Table 4.6 gives the percentage of respondents who last attended the various schooling systems listed. South Australian 1989 Year 12 secondary school population figures and the 1985 University of Adelaide entrant figures as found by Power et al. are also given. These figures indicated that the university student population still markedly over-represented those from the independent system whilst those from state schools were greatly under-represented. The Catholic school system though, appeared to be the system most accurately represented in the first year level university student body.

Comparisons of the 1990 survey findings with those of Power et al. indicated that

Table 4.6: Last type of secondary schooling attended.

Secondary School Type	Survey 1990 N	Survey 1990 %	1985 U. of A. Entrants (Power) %	1989 Year 12 Sec. School Pop.* %
State	394	48.8	56	72.7
Catholic	128	15.8	16	15.0
Other Independent	215	26.6	28	12.3
T. A. F. E. or equivalent	47	5.8	–	–
Overseas School or College	24	3.0	–	–
Total	808	100.0	100	100.0

*Source: Australian Bureau of Statistics, *Schools, South Australia, 1989*, Cat. No. 4221.4, May 1990.

the representation of school systems is much the same as it was five years ago.

Respondents' Educational Level

As would be expected, the vast majority of respondents, 92 %, had as their highest educational qualification the completion of secondary schooling. A trade certificate or post-secondary diploma was the highest educational level for 4 % (32) whilst the remaining 4 % held at least a degree.

4.1.5 Respondents' University Course

Course Preference

A large proportion of students, 30 %, indicated that they were not enrolled in their first preference course as specified on their SATAC application. Of these, 29 % would have preferred to be studying medicine, health science or dentistry. The next largest preferred course was economics which was the first choice of 14 %.

The best comparative data available from the 1985 study by Power et al. is from the question 'If there were no quotas and you could enrol in any university or CAE course you liked, would you have enrolled in the *same* course?' For 1985 University of Adelaide entrants, it was found that only 18 % would have enrolled in another course. The most likely explanation for this figure being significantly less than the 30 % found by the 1990 survey is that the 1990 sample generally consisted of students not enrolled in courses with the highest cut-off scores, such students being more likely not to be in their first preference course than those in high cut-off score courses.

Entry Qualification and Enrolment Type

As expected, the vast majority of students, 88 %, had Australian Matriculation or Year 12 as their entry qualification. Adult Matriculation and Special Entry entrants made up 8 % of the sample, whilst 1 % used an overseas qualification to enter. A degree was claimed to be the entry qualification by 1 % of the sample.

Those enrolled full-time represented 90 % of the sample whilst 10 % were enrolled part-time.

Influential Course Choice Factors

Students were given a list of factors which might have influenced their choice of course and asked to rate each of these as either 'Important' or 'Not important'. The most significant factor, indicated as 'Important' by 97 % of respondents, was 'Own aspirations and interests', followed by 'Content of course' (83 %) and 'Personal challenge offered' (81 %). The prestige or status of a course was important for 28 %, whilst the financial rewards at the end of the course was considered important by 55 %. The reason 'Better able to serve society' was considered important by 46 %.

Parents', teachers' and friends' attitudes and influence were rated as important factors in influencing the choice of course by 25 %, 17 % and 12 % of respondents respectively. The Year 12 score needed for entry was considered as an important choice factor by 55 %, whilst the number of contact hours per week was considered important by only 17 %. The least important factor indicated by students was 'To avoid written English' with 7 % (55) indicating this as an important factor.

Higher Education Aspirations

Only 18 % of students planned an Ordinary Bachelors Degree as their highest education level. Honours degree level was the most popular level planned with 40 % aiming to reach this goal. A greater proportion of students aspired to a Doctorate, 17 %, than to a Masters Degree, 13 %. The remaining 12 % had as their highest planned education a Post-graduate Diploma or a Post-graduate Bachelor Degree.

University of Adelaide 1990 enrolment data for the Arts, Economics and Commerce, and Science faculties[5] revealed that the number of Honours students as a

[5] *1990 Statistics*, op. cit. pp. 2 & 8.

proportion of commencing bachelor degree students was 15 %, whilst the corresponding proportion of commencing Higher Degree (Masters or Doctorate) students was 14 %. These proportions, being substantially lower than the proportion of survey students aspiring to Honours or a Higher Degree, suggest that many students will not reach their desired educational level.

4.1.6 Language Background of Students

Languages Used With Family and Friends

Students were asked to indicate to what degree they used a language other than English with their family and friends. With family, 85 % claimed to use English only, while 9 % used mainly English plus another tongue. Only 6 % (46) used a language other than English only or mostly. A similar pattern of language usage existed with students' friends, except that there was a tendency for more English to be used. These figures indicate that 15 % used, at least to some degree, a language other than English with their family. This figure is somewhat higher than the 11.1 % of five to nineteen year old South Australians who responded positively to the question 'Does the person speak a language other than English *at home*?' in the 1986 Census (Hugo, 1989, p. 227). The 15 % of students who spoke a language other than English with their family as found by the 1990 survey is, however, lower than the percentage of 1991 South Australian higher education students who spoke a language other than English in their home as found by the Office of Tertiary Education[6], namely, 19.2 %.

In the 1985 study by Power et al., students were asked 'What languages are spoken by your parents at home?' and given the same range of responses as used in the 1990 survey. For 1985 entrants to the University of Adelaide, 80 % claimed that their parents used English only. The above results tend to indicate that the proportion of students in South Australian higher education who spoke a language other than English in the home has increased over the past six years and is higher than the proportion in the general South Australian population.

Students listed up to three non-English languages which they used with family and friends. With family, of those who listed one or more, and considering each language

[6]Office of Tertiary Education, *Ethnicity of University Students in South Australia 1991*, Information Bulletin No. 91/4, 1991.

listed by each student as an individual response, European languages[7] represented 62 % of all responses, meaning that European languages represented 62 % of all non-English language usage with the family. These languages were used by 82 students. Asian languages were the next most used non-English languages representing 32 % of non-English language usage (being used by 43 students). Specifically, Italian, German and Chinese (Mandarin) were the most used, with about 19 students mentioning each.

With friends, European languages represented 56 % of non-English language usage (61 students) followed by Asian languages at 42 % (46). In particular, German was the most used (22 students) followed by Chinese (Mandarin) (14) and French (13).

Students were also asked to rate their ability to read and write in their main non-English language used with family and friends. Of those students who claimed to regularly use a non-English language, the percentages of students who claimed to read or write it well or very well were 69 % and 59 % respectively.

Non-English Languages Studied at Primary School, Secondary School and University

Students listed up to three languages which they had studied at each of primary school, secondary school or university. Across the board, non-English European languages were the most studied.

An interesting fact found was that Asian languages were studied to a greater extent at the primary level rather than at the secondary level. Furthermore, more students studied Asian languages at the university than at school. Although Asian overseas students account for a large proportion of those studying Asian languages, even when Malaysian-born students were omitted from the sample as the group containing most Asian overseas students (see table C. 5), the proportions of those studying Asian languages at the primary, secondary and university levels were 14 %, 10 % and 28 % respectively.

Specifically, French was the most studied non-English language at primary school accounting for 27 % of language study, followed by Italian 23 % and German 20 %. For secondary school, French (40 %), German (30 %) and Italian (8 %) were the most studied languages. French and German were also the most studied languages at the University, accounting for 28 % each, followed by Japanese at 16 %.

[7]See table D. 2 (appendix D) for classification of languages.

Table 4.7: Non-English languages studied at primary school, secondary school and university

Language Studied*	Primary School		Secondary School		University	
	N	%	N	%	N	%
Non-English European	295	79.3	771	87.0	49	72.1
Asian	74	19.9	109	12.3	19	27.9
Other	3	0.8	6	0.7	0	0.0
Totals	372	100.0	886	100.0	68	100.0

*See table D. 3 for classification of languages.

Other information extracted from the data were that at least 35 % of the whole sample had studied at least one non-English language at some stage during their primary schooling, whilst for secondary school the corresponding figure was 77 %.

In order to roughly gauge whether or not these proportions were in line with those in the South Australian population at large, South Australian Department of Education data on enrolments in languages other than English courses in state primary and secondary schools were considered. In South Australian Department of Education primary schools in 1988, students enrolled in language other than English courses accounted for 26 % of all primary students enrolled[8]. This means that at least 26 % of those enrolled in a state primary school in 1988 would have studied a language other than English on completion of their primary schooling.

The difference in arriving at the survey and state percentages should be noted. The survey percentage was from a population, all of which had already completed primary schooling. The Education Department figure was from the primary school population of 1988. Thus the percentage of all state primary students enrolled in a language other than English course in 1988 omits those not currently enrolled in a language other than English course but who have already been, or may later be, enrolled in a language other than English course. Thus the percentage of 1988 state primary students who will have studied a language other than English is likely to be higher than 26 % and therefore closer to the survey figure of 35 %.

Another possible factor which would make the survey figure higher than that for the state figure is that the survey population included a number of students who had

[8]Source: South Australian Institute of Languages, *The Language Challenge: A Policy for South Australia*, 1990, p. 29.

their primary schooling in a non-English speaking country. Also, some students would have had their primary education in an independent or Catholic school. However, when only those survey students born in Australia and who last had their secondary schooling in a state school were considered, it was found that at least 32 % had studied a language other than English at primary school, a figure only 3 % less than that found for the overall survey population.

In South Australian Department of Education secondary schools in 1988, 33 % of students were enrolled in a language other than English course.[9] In other words, at least 33 % of those enrolled in a state secondary school in 1988 would have studied a language other than English on completion of their secondary schooling, a figure substantially less than the 77 % found for the survey population. The same arguments as for the primary school figures apply to the secondary school figures in explaining that the state figure would in fact be much higher if calculated in the same manner as the survey figure. The argument that the survey figure is larger due to the sample containing a number of overseas born students who would have studied at a secondary school in a non-English speaking country may be disregarded as it was found that at least 78 % of those students born in Australia, and who last had their secondary schooling at a state school, had studied a non-English language at some time during their secondary schooling.

One possible factor that could have contributed to the higher proportion of the university sample having studied a language other than English is that only the better performing students in secondary school may be allowed or encouraged to study a language other than English. These students, being the better students, are in turn more likely to gain admission to university.

4.1.7 Ethnicity of Students

Students' and Parents' Birthplaces

Table 4.8 gives the broad categories of the student's and students' parent's countries of birth as found by the survey and relevant South Australian ABS 1986 Census data for comparison.[10]

[9] ibid. p. 29.

[10] See tables D. 1 and D. 5 (appendix D) for information on the recoding of countries of birth into the broader categories.

Australia was the birthplace for 82 % of students, with a further 7 % being born in another English speaking country, 3 % in non-English speaking European countries, 6 % in Asian language speaking countries, and 2 % in other non-English speaking countries. Comparing these data with ABS country of birth data for South Australian persons aged 0–19 years[11], indications are that Australian born students were under-represented whilst for each other category over-representation was the case. Those from the 'Other non-English speaking' category were the most over-represented followed by those born in Asian language speaking countries, the over-representation of the latter group being due mostly, if not totally, to the presence of Asian overseas students.

For both students' mothers and fathers, about 64 % were born in Australia, 15 % in another English speaking country, 12 % in a non-English speaking European country, 7 % in an Asian language country, and 2 % in other non-English speaking countries (table 4.8). Comparisons with ABS data indicated that the proportion of students with an Australian born parent approximated the proportions in the South Australian population. Those with a parent born in other English or non-English European language speaking countries were under-represented. The group with the greatest degree of over-representation was those with a parent in the 'Other non-English speaking' category, followed by those with an Asian parent. Power et al. found that smaller percentages of 1985 entrants to the University of Adelaide had Australian born mothers and fathers, 61 % and 57 % respectively.

The above findings show that when the student's country of birth and the parent's countries of birth are used as criteria for determining which groups are under or over-represented, different results arise. Australian born students were found to be notably under-represented whilst those with an Australian born parent were found to approximate the proportion in the South Australian population. Students born in the 'Other English speaking' and 'Non-English speaking Europe' categories were found to be over-represented, whilst for students with a parent in these categories, under-representation was the case.

A possible explanation for these seemingly conflicting results lies in the proportions of student aged people in the South Australian population with *both* parents

[11]For students, as their 1986 ages would mean they would be roughly split between the ABS 0–14 and 15–19 age categories, these two age categories were combined for the purpose of making comparisons.

Table 4.8: Students' and students' parents' countries of birth: broad categories.

Country of Birth	Student		S.A. Persons Aged 0–19[1]	Mother		S.A. Females Aged 35–54[1]	Father		S.A. Males Aged 35–54[1]
	N	%	%	N	%	%	N	%	%
Australia	668	82.4	93.2	524	64.5	65.3	515	63.5	64.1
Other English speaking	59	7.3	4.1	117	14.4	18.3	131	16.2	18.2
Non-English speaking Europe	21	2.6	1.0	96	11.8	14.0	95	11.7	15.3
Asian[2]	47	5.8	1.7	58	7.1	2.3	57	7.0	2.2
Other non-English speaking	16	2.0	0.0	18	2.2	0.1	13	1.6	0.2
Total	811	100.0	100.0	813	100.0	100.0	811	100.0	100.0

[1]Source: ABS, *Census 86 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2494.0.
[2]'Asian' category contains a large group of Asian overseas students.

born in the same country, compared with the proportions in the survey sample. For example, consider all persons born in country β, say, in a population, with the assumption that a person born in country β will have at least one parent born in country β. If the proportion of all persons born in β with both parents born in β is much higher than the equivalent proportion for a sub-sample of the population, then it is possible that for the sub-sample, persons born in country β may be over-represented when compared to the general population but those with a mother, or those with a father, born in β will be under-represented when compared to the general population.

In order to identify specific ethnic groups which were under or over-represented, comparisons of parental birthplace data with ABS data were made in table 4.9 below. Caution should be exercised when interpreting this data due to the low numbers occurring in some categories. Student birthplace data was omitted from this comparison due to insufficient numbers and the broadness of using the ABS 0–19 year old age category. The non-English speaking groups identified as being over-represented

Table 4.9: Students' parents' countries of birth: specific categories.

Country of Birth	Mother		S.A. Females Aged 35–54*		Father		S.A. Males Aged 35–54*	
	N	%	N	%	N	%	N	%
Australia	524	64.5	102590	65.3	515	63.5	101347	64.1
U.K. and Ireland	98	12.1	26184	16.7	115	14.2	25876	16.4
Germany	23	2.8	3381	2.2	18	2.2	3481	2.2
Greece	6	0.7	3733	2.4	8	1.0	3621	2.3
Italy	21	2.6	6748	4.3	25	3.1	7573	4.8
Lebanon	1	0.1	206	0.1	0	0.0	280	0.2
Malta	0	0.0	508	0.3	0	0.0	550	0.3
Netherlands	3	0.4	2247	1.4	4	0.5	2613	1.7
Poland	6	0.7	876	0.6	5	0.6	809	0.5
Vietnam	7	0.9	459	0.3	7	0.9	631	0.4
Yugoslavia	9	1.1	1784	1.1	10	1.2	2384	1.5
Other**	115	14.1	8365	5.3	104	12.8	8986	5.7
Total	813	100.0	157081	100.0	811	100.0	158151	100.1

*Source: ABS, *Census 86 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2494.0.

**'Other' category contains a large group of Asian overseas students.

were the German and Vietnamese, whilst the Polish and Yugoslavian groups roughly equaled the representation in the wider community. On the other hand, those with

parents born in Greece, Italy, the Netherlands, Lebanon or Malta were found to be under-represented. The 'Other' category shows as being vastly over-represented, most likely because of the presence of Asian overseas students.

These results may be compared with the 1985 South Australian higher education entrant data of Power et al. (1985). Again, caution should be exercised when interpreting results as Power's data covers students from all disciplines and all higher education institutions in South Australia whereas most of the survey data covers students from only three disciplines and one higher education institution.

Power considered students' fathers' countries of birth and compared these findings with ABS data (see table 2.12). On comparing the 1990 survey data and the data of Power et al., three major differences become apparent. Those with a German born father were found to be significantly under-represented by Power, whereas in the 1990 survey, they were found to equally represent the proportion in the South Australian population. For students with a father born in the Netherlands, Power found them to be only slightly under-represented whereas in the survey they were found to be under-represented to a much greater extent. The greatest discrepancy occurred when students with a Greek father were considered. Power found this group to be substantially over-represented in his data whereas the reverse was found by the survey. This variation may be partially explained by those from Greek backgrounds tending to have a greater preference for a college of advanced education, as was found by Taft et al. (1971) (see section 2.2). Thus one would expect the proportion of those of Greek background in a university population to be less than in a higher education population generally, this population including those in colleges of advanced education. Another possibility is that those with a Greek father may be more highly concentrated in the medical and law faculties, these two faculties not being covered by the 1990 survey.

Other parental facts found were that 46 % of students had at least one parent born overseas, 26 % having at least one parent born in a non-English speaking country. Students with both parents born in a non-English speaking country represented 16 % of the sample, 6 % having both parents Asian born and 9 % with both born in other non-English speaking countries.

Some rough comparisons of this type of data can be made with similar South Australian 1986 Census data available from Hugo (1989). Hugo provides data on

the birthplace of parents of the Australian born South Australian population. This

Table 4.10: Parental birthplace of the Australian born.

	Birthplace of Parents		
	Both Australia	One Australia, one Overseas.	Both Overseas
1990 Survey Aust^n born students.	65.3	18.4	16.3
1986 Australian born S.A. population[1]	74.1	13.6	12.3

[1]Source: Hugo, G., *Atlas of the Australian People: South Australia, 1986 Census*, 1989.

data is therefore compared to the birthplace of Australian born students only in the 1990 survey (table 4.10). These data indicate that the student population in this survey has a more diverse range of cultural backgrounds than the South Australian population as a whole, with 65 % of Australian born students in the survey having both parents born in Australia compared with 74 % for the Australian born South Australian population.

Ethnic Identity

Students were asked to indicate the ancestral background with which they most closely identified. Table 4.11 shows the general categories into which the responses fell. Despite 79 % of students having both parents born in English speaking countries, only 64 % of the sample identified themselves as of Anglo-Celtic background. A further investigation of ethnic identity and birthplace of students and parents is in

Table 4.11: Ancestral background identified with.

Background	N	%
Anglo-Celtic	495	63.6
Non-Anglo-Celtic European	131	16.8
Asian	33	4.2
Other specific	12	1.5
Mixed	53	6.8
None	37	4.8
Overseas Student	17	2.2
Total	778	100.0

section 4.2.3, 'Differences Related to Students' and Parents' Countries of Birth.'

A question seeking ancestral background was also asked in the 1986 Census. The question was as follows:

Q 15 What is each person's ancestry ?

- For example, Greek, English, Indian, Armenian
  Aboriginal, Chinese e. t. c.

An important difference in responses to the 1986 Census question and the 1990 survey prohibits meaningful comparisons. With the 1986 Census, information on how to fill out the questionnaire was also supplied. In this information it was explicitly indicated that respondents could give 'Australian' as a response to the ancestral question if they saw this as being appropriate. Accordingly, 20 % of South Australians responded with 'Australian'. In the 1990 questionnaire though, the category 'Australian' was not given explicitly as a possible response as it was considered to be too broad and unspecific as a category. However, students still had the option of responding 'Australian' at the 'Other, please specify' line if they thought the other categories inappropriate. No student chose to do this though.

4.1.8 Social Interaction

As little research has been done on the degree of social interaction between various ethnic groups and the dominant Anglo-Celtic culture, students were asked to think of their three closest friends and to indicate what number of these were of British or Anglo-Celtic background, their own cultural background (if other than British/Anglo-Celtic), or a minority cultural background other than their own.

Of those students who identified most closely with an Anglo-Celtic background (in question 22 of the questionnaire), 75 % had all three of their closest friends of Anglo-Celtic background (see table 4.12). On the other hand, of those who identified most closely with a specific non-Anglo-Celtic background, only 15 % had all three closest friends of their own cultural background. This indicates that those from non-Anglo-Celtic background are more likely to interact with people of different backgrounds to their own than those of Anglo-Celtic background.

Of Anglo-Celtic background students, 26 % claimed to have one or more friends of another ethnic background. For non-Anglo-Celtic background students, 33 % had one

Table 4.12: Ethnicity of three closest friends.

Identity of respondent*	Percentage with all three friends of same background	Percentage with at least one friend of a different background
Anglo-Celtic	75	25
Specific Non-Anglo-Celtic group	15	85

*From question 22 of questionnaire (see appendix B).

or more friends of a minority culture other than their own and 75 % had one or more friends of Anglo-Celtic background. Overall, 85 % of non-Anglo-Celtic background students had at least one friend of a cultural background other than their own.

It should be noted that, since those of Anglo-Celtic origin far out-weigh those of any minority ethnic background in Australia in number, it would be unlikely for the proportion of Anglo-Celtic background students having one or more friends from another cultural background to approximate that for non-Anglo-Celtic background students. For this situation to exist, it would require those from minority ethnic backgrounds to have, on average, considerably more friends of Anglo-Celtic background, than for Anglo-Celtic background students to have of minority ethnic background friends. Nevertheless, the figures do show that the majority of non-Anglo-Celtic identifying students have been able to make friends with Anglo-Celtic identifying students. This finding indicates that those from minority cultures are not being excluded by those from the dominant culture, nor are they separating themselves from this group.

4.2 Cross–Classified Characteristics of Questionnaire Data

In this section, selected questionnaire data was inter-related to identify any significant differences between various groupings of students.

4.2.1 Gender Differences

Here, endeavours were made to locate differences in characteristics of students related to gender. Some comparisons were made with the findings of the study of 1980

entrants to the University of Adelaide by Williams (1982).

Age

A t-test of female and male mean ages was insignificant, as was a χ^2-test of student age and sex with ages grouped into less than 19 years or 19 years or more. Thus one may conclude that there was no significant difference in student age between the sexes.

Semester Residence

Although no significant differences between the sexes for students' semester residence were found, some differences were still identified (table 4.13). A 'college or hall of residence' was the category with the highest proportion of females whilst the 'home

Table 4.13: Semester residence by gender.

Count Row % Column %	Male	Female	Row Total
Home with parents/relations	266 50.1 71.3	265 49.9 63.2	531 67.0
College or hall of residence	18 34.6 4.8	34 65.4 8.1	52 6.6
Sharing house or flat with friends	33 41.8 8.8	46 58.2 11.0	79 10.0
Flat or house with partner/alone/with own children	32 40.0 8.6	48 60.0 11.5	80 10.1
Boarding	19 47.5 5.1	21 52.5 5.0	40 5.1
Other	5 50.0 1.3	5 50.0 1.2	10 1.3
Column Total	373 47.1	419 52.9	792 100.0

For χ^2-test, $p>0.17$.

with parents/relations' category had the lowest proportion of females.

To check for gender differences in the preference for living away from home, a χ^2-test of gender and semester residence with residences grouped into 'home with parents/relations' or 'other' was conducted. The test was significant ($p<0.02$) with females more likely to be living away from home (37 % doing so) than males (29 %). The differences found by Williams (1982) for 1980 entrants to the University of Adelaide were not as great with only 19 % of males living away from home compared to 22 % for females.

Financial Support

No significant differences between the sexes were found in relation to dependence on AUSTUDY, casual or part-time work, parents/guardians or spouse/partner as sources of financial support. Williams (1982) also found that differences between the sexes for dependence on AUSTUDY, casual or part-time work, and parents/guardians was minimal for 1980 entrants to the University of Adelaide.

In the 1990 survey though, dependence on regular full-time work was found to be significantly different ($p<0.05$ for χ^2-test) with 11 % of males relying on this source to some extent compared with only 6 % of females.

Parental Occupation and Education Levels

For parental occupation and education levels, no significant differences were found in relation to gender.

University Course Related Variables

In relation to whether students were enrolled in their first preference course as stated on their SATAC application or not, and whether they were enrolled full or part-time, no significant differences were found between the sexes.

Regarding the subject enrolled in, namely, whether English I, Chemistry I or Economics I, significant differences were found between the sexes. Table 4.14 below shows that gender inequalities in participation in subjects still persisted. Males were still over-represented in Chemistry and Economics whilst females were over-represented in English. However, comparisons with University of Adelaide student statistics for 1982 and 1985 enrolments indicated that the degree of male or female over-representation in these subjects has continued to decrease.

Table 4.14: Female representation in subjects.

Subject	Female Proportion (%)		
	1982[1]	1985[1]	Survey[2]
English I	74	72	68
Chemistry I	33	40	45
Economics I	33	35	40

[1]From University of Adelaide *Student–Staff Statistics*, 1983 & 1985.
[2]For χ^2-test, $p<0.001$.

In order to find gender differences between the importance placed on various possible influential course choice factors (question 14 of questionnaire), χ^2-tests were carried out. The factors for which there were no statistically significant gender differences ($p \geq 0.05$) were 'Contact hours per week', 'Matric score needed for entry', 'Unable to get in elsewhere', 'Parents' attitudes and influence', 'Teachers' attitudes and influence', 'Friends attitudes and influence' and 'Prestige or status involved'.

The factors for which a statistically significant difference was found between the sexes are given in table 4.15 along with the appropriate frequencies, percentages and significances. A slightly greater proportion of females, 98 %, considered 'Own aspirations and interests' as an important choice factor compared to males (94 %). Consistent with this difference, a greater proportion of females, 87 %, responded 'important' to the factor 'Content of course' compared with only 79 % for males. The largest of all the significant differences was for the 'Personal challenge offered' factor which was considered important by 89 % of females as opposed to only 72 % for males. Females also placed greater importance on the 'Better able to serve society' factor, 51 % considering this to be important compared with 41 % for males.

Despite the greater importance placed by females on course content and the personal challenge offered, conflicting results appear with regard to the 'Cost and ease of transport' and 'Unsure as to what else to do' factors. Here, significantly greater proportions of females than males considered each of these factors as being important. For the 'Cost and ease of transport' factor, 24 % of females compared to 16 % of males thought this important with 23 % and 16 % being the respective figures for the 'Unsure as to what else to do' factor. The only factors for which a greater proportion of males than females responded important were 'Financial rewards at end of course' and 'To avoid written English'. The latter finding suggested that males

Table 4.15: Influential course choice factors by gender.

Count Row %		Important	Not Important	Significance[3]
Own aspirations and interests	M[1]	355 94.4	21 5.6	0.0032
	F[2]	406 98.3	7 1.7	
Personal challenge offered	M	267 71.8	105 28.2	0.0000
	F	363 89.2	44 10.8	
Better able to serve society	M	151 40.6	221 59.4	0.0046
	F	206 50.7	200 49.3	
To avoid written English	M	36 9.7	335 90.3	0.0064
	F	19 4.7	387 95.3	
Financial rewards at end of course	M	222 59.0	154 41.0	0.0351
	F	213 51.6	200 48.4	
Content of course	M	297 79.4	77 20.6	0.0070
	F	356 86.6	55 13.4	
Opportunity to change career	M	198 53.1	175 46.9	0.0003
	F	269 65.8	140 34.2	
Cost and ease of transport	M	61 16.4	312 83.6	0.0052
	F	100 24.4	309 75.6	
Unsure as to what else to do	M	58 15.6	313 84.4	0.0079
	F	94 23.2	311 76.8	

[1]Male.
[2]Female.
[3]For χ^2-test.

were less confident than females in their written English abilities which may partly explain why males were more likely to be found in the sciences whilst females were more likely to be found in the humanities.

The above results generally indicated that males were less likely to be concerned with the intrinsic value of a course of study, but rather with what could be gained at the completion of the course.

Higher Education Aspirations

Although a slightly higher proportion of males than females indicated that they aspired to a higher degree, this difference was insignificant.

Language Background

In dealing with the data on languages regularly used with family and friends, the responses 'English only' and 'Mainly English plus Other(s)' were grouped together as were the responses 'Other(s) only, no English' and 'Mainly Other(s) plus English'. With the data regrouped in this manner, for both language use with family and friends, a slightly larger proportion of males used English only or mostly compared with females. This difference was insignificant though.

With regard to specific language usage, for both language usage with family and friends, about equal proportions of males and females used an Asian language. There was, however, a slight tendency for a lower proportion of females to use non-English European languages than males but for a greater proportion to use other non-English languages.

On the question of how well the respondents could read or write their main non-English language, females considered themselves better on both counts than did males. Of females, 76 % claimed to be able to read their main non-English language well or very well compared with only 55 % of males. Similarly, 66 % of females claimed to be able to write their main non-English language well or very well compared with only 46 % for males. Both of these differences were statistically significant (see table 4.16). These results suggest that females generally have a higher ability in language learning than males.

Regarding languages studied at primary and secondary school, of those who studied a non-English language at primary or secondary school, there were practically no

Table 4.16: Respondents' perceptions of ability to read and write in main non-English language by sex.

Count Row %		Very well or Well	A little or Not at all	Significance for χ^2-test
Ability to Read	M[1]	34 54.8	28 45.2	0.0035
	F[2]	84 76.4	26 23.6	
Ability to Write	M[1]	28 45.9	33 54.1	0.0096
	F[2]	71 66.4	36 33.6	

[1]Male.
[2]Female.

differences in the proportions of females and males who studied either non-English European, Asian or other non-English languages. The number of students who indicated that they had studied a language at university was too low to draw any conclusions. Differences did occur though, when proportions of males and females who had studied a non-English language were considered. At the primary level, 40 % of females in the sample indicated that they had studied at least one non-English language compared to only 30 % of males. This difference was not as large at the secondary level where 79 % of females claimed to have studied at least one non-English language compared with 74 % of males.

Ethnicity

With the country of birth of students and students' parents recoded into the categories shown in table D. 1, no significant differences were found between each of these variables and gender. With countries of birth recoded into 'Australia' or 'Other' though, a significant difference ($p<0.049$) was found between the students' countries of birth and gender. Here, 85 % of males were born in Australia compared with only 80 % for females. Differences between parents' countries of birth and gender remained insignificant, although greater proportions of males than females had mothers and fathers born in Australia. No significant differences related to ancestral identification and gender were found.

Social Interaction

For Anglo-Celtic identifying students, the number of Anglo-Celtic background friends they had was found not to be significantly different between the sexes. Similarly, for students identifying with a specific non-Anglo-Celtic background, the number of Anglo-Celtic background friends or the number of their friends from their own ancestral background was found not to be significantly different between the sexes. These findings suggest that, with regard to ancestral background, males and females socially integrate to about the same degree.

4.2.2 Socio-Economic Status Differences

From the questionnaire data collected, parents' occupation and education levels were taken as the main socio-economic status indicators. These indicators were used to find socio-economic status differences in responses to various questionnaire items.

The categories used for specifying occupation level (see table C. 6) were most often regrouped for the purpose of making cross-tabulations with other questionnaire data. The two main groups were parents in the professional/technical or administrative/managerial/executive occupation categories and, for the second group, all those not in these categories. These two groups are referred to as the 'high' and 'low' occupation groups respectively. In dealing with parental occupation data, respondents who responded with 'retired', 'unemployed' or 'deceased' were omitted.

Similarly, parental education levels were also regrouped for the purpose of making cross-tabulations. Here, the data was regrouped into those with parents holding a Bachelors Degree or higher qualification, and those with parents with an education level lower than a Bachelors Degree. These two groups are referred to as the 'high' and 'low' education groups respectively.

Age

Tests conducted in this area all consistently indicated that younger students tend to have parents in the higher occupation and education levels. T-tests of students' mean year of birth (table 4.17) generally indicated that the mean age of students with parents in the high occupation or education categories were one to two years younger than the mean age of those with parents in the low occupation or education

Table 4.17: T-tests of students' year of birth with parental occupation and education levels.

	Occupation Level[1]		2-tail	Education Level[2]		2-tail
	High	Low	significance	High	Low	significance
	Mean year of birth			Mean year of birth		
Mother	1970.48	1969.10	0.001	1970.67	1968.96	0.000
Father	1970.28	1968.67	0.002	1970.95	1968.55	0.000

[1]High: Professional/technical and administrative/managerial/executive categories. Low: Other.
[2]High: Degree or higher qualification. Low: Less than Degree.

levels (table 4.17).

These differences may arise due to those from lower socio-economic backgrounds having to delay entry to university until they have formed a large enough financial base allowing them to undertake university studies rather than being able to rely on the financial support of their parents. This may be particularly the case for mature age students who may not have had an opportunity to undertake university studies in their youth but after working for several years and becoming financially independent from parents find themselves in a position to be able to undertake university study.

Another consistent pattern relating to cross-classified age and socio-economic background data is that the greater and more statistically significant differences occurred with regard to parental education levels rather than parental occupation levels. Further, larger differences can also be attributed to respondents' fathers rather than mothers.

Semester Residence

With students grouped into those living with parents or relatives, and those living away from home, χ^2-tests of student residence and parental education and occupation levels were conducted. Findings strongly indicated that those with parents in the high education and occupation categories were more likely to live at home with their parents or relations.

No significant difference was found in the likelihood of students to be living with parents based on mothers' occupation levels. For mothers' education levels though, a significant difference was found ($p<0.018$) with 29 % of students living with parents having a mother in the high education category compared with 21 % of students living away from parents. For both fathers' occupation and education levels, differences were significant ($p<0.001$ for both). Here, of students living with parents/relations, 65 % had a father in the high occupation category compared with only 50 % of those living away from parents. Also, 41 % of those living with parents had a father in the high education category compared with only 23 % of those living away from parents.

Again, as was found when dealing with age related differences, the greatest and most significant differences occurred in relation to parental *education* levels, and *fathers'* education or occupation levels.

Financial Support

As would be expected, all χ^2-tests of students' dependence on AUSTUDY and parental occupation and education levels were significant ($p<0.003$) with those more heavily relying on AUSTUDY having parents in the lower occupation and education categories. Although all cross-tabulations of student dependence on full-time work and parental occupation and education levels showed that those with parents in the lower categories had a greater dependence on this financial source, only one difference was statistically significant ($p<0.004$), namely, in relation to fathers' education levels. Here, of those with a father in the higher education level, 96 % did not rely on full-time work at all as a financial source compared with 89 % of those with a father in the low education category.

The tables were turned when dependence on casual work and parents/guardians were investigated. For dependence on casual work, all tests with parental occupation and education levels were significant ($p<0.013$) except for one, mothers' occupations ($p=0.051$). Nevertheless, for all cross-tabulations of dependence on casual work with parental occupation and education levels, of those with a parent in the high occupation or education category, about 23 % did not rely on casual work at all compared with about 34 % of those with a parent in the lower categories. A similar pattern emerged for dependence on parents/guardians for financial support. Here, all χ^2-tests were significant ($p<0.013$) and for all those with a parent in a high occupation or education category, about 14 % did not rely on parents at all compared with about 27 % of those with a parent in a lower occupation or education category.

The most likely explanation for these outcomes is that as those with parents in the low occupation or education categories had greater access to AUSTUDY benefits, their financial dependence on casual work or parents was less. On the other hand, those with parents in the high occupation or education categories were more likely to be ineligible for any AUSTUDY assistance and thus were forced to rely on casual work or parents for financial support.

Secondary Schooling

As shown in table 4.18, all χ^2-tests of secondary school type attended with parental occupation and education levels were significant. Greater proportions of students with mothers or fathers in the low occupation or education categories than in the

Table 4.18: Students' secondary schooling by parental occupation and education levels.

Count Row % Column %	Mother						Father					
	Occupation Level[1]			Education Level[2]			Occupation Level			Education Level		
	High	Low	Signif.	High	Low	Signif.	High	Low	Signif.	High	Low	Signif.
State	125	233	0.003	90	288	0.001	199	156	0.000	113	261	0.000
	34.9	65.1		23.8	76.2		56.1	43.9		30.2	69.8	
	44.2	51.1		43.1	50.9		44.7	54.4		41.1	53.5	
Catholic	40	78		27	96		57	54		33	85	
	33.9	66.1		22.0	78.0		51.4	48.6		28.0	72.0	
	14.1	17.1		12.9	17.0		12.8	18.8		12.0	17.4	
Other Independent	93	108		77	129		151	51		108	96	
	46.3	53.7		37.4	62.6		74.8	25.2		52.9	47.1	
	32.9	23.7		36.8	22.8		33.9	17.8		39.3	19.7	
TAFE	11	29		7	38		19	21		11	33	
	27.5	72.5		15.6	84.4		47.5	52.5		25.0	75.0	
	3.9	6.4		3.3	6.7		4.3	7.3		4.0	6.8	
Overseas school or college	14	8		8	15		19	5		10	13	
	63.6	36.4		34.8	65.2		79.2	20.8		43.5	56.5	
	4.9	1.8		3.8	2.7		4.3	1.7		3.6	2.7	

[1]High: Professional/technical and administrative/managerial/executive categories. Low: Other.
[2]High: Degree or higher qualification. Low: Less than Degree.

high level categories attended a state or Catholic school system or TAFE, whilst the reverse was true for those who attended an independent school or an overseas school or college. The greatest and most significant differences occurred in relation to fathers' rather than mothers' occupation and education levels.

The largest proportional differences were found for those who attended an independent school, an overseas school or college, or TAFE. Of those with a father in the high occupation category, 34 % attended an independent school compared with only 18 % of those with a father in the low occupation category, whilst for those attending an overseas school or college, the respective figures were 4.3 % and 1.7 %. A reverse difference occurred in the TAFE sector. Here, 7.3 % of those with a father in the low occupation category attended TAFE compared with only 4.3 % of those with a father in the high occupation category. Greater proportions of students with fathers in the low occupation category than in the high occupation category were also found in the state and Catholic school systems, proportionately more so in the Catholic school sector.

University Course Related Variables

On the question of whether students were enrolled in their first preference course as stated in their SATAC application or not, no differences were found relating to parental occupation or education levels.

Although a greater proportion of students with mothers in the high occupation and education categories were enrolled full-time rather than part-time, these differences were not significant. However, in relation to fathers' occupation and education levels, differences in full or part-time enrolment were significant ($p<0.004$ and $p<0.001$ respectively). Of those enrolled full-time, 63 % had fathers in the high occupation category compared with only 45 % of those enrolled part-time. The greatest proportional difference occurred in relation to fathers' education levels though, where 38 % of those enrolled full-time had a father in the high education category compared with only 17 % of those enrolled part-time.

In regard to the subject enrolled in, namely, whether English I, Chemistry I or Economics I, significant differences were found related to parental occupation and education levels. Of those enrolled in English I, 44 % had a mother in the high occupation category compared to 35 % and 34 % of those enrolled in Chemistry I

and Economics I respectively ($p<0.026$ for χ^2-test). A similar pattern emerged when mothers' education levels were considered. Here, of those enrolled in English I, 33 % had a mother in the high education category compared with 24 % and 22 % of those enrolled in Chemistry I and Economics I respectively ($p<0.015$).

In relation to fathers' occupation levels, among those enrolled in English I, 68 % had a father in the high occupation category compared with 55 % and 63 % of those enrolled in Chemistry I and Economics I respectively ($p<0.004$). Although no significant differences were found in relation to fathers' education levels, those enrolled in English I had the greatest proportion of fathers in the high education level.

Thus it may be concluded that English I enrolments contained larger proportions of students from higher status backgrounds in comparison with those in Chemistry I and Economics I, the socio-economic status level of students in these two latter subjects being much the same.

In order to locate socio-economic differences between the importance placed on various factors that could have influenced a student's choice of course (question 14 of questionnaire), χ^2-tests were carried out on each course choice factor (considered as either 'important' or 'not important') with each of mothers' and fathers' occupation and education level categories. By far, the factor showing the most consistent and significant differences with the socio-economic indicators was parental influence. Of those with a father in the high education category, 32 % considered parental influence an important factor in choosing their course compared with only 22 % of those with a father in the low education category ($p<0.002$). Similarly, of those with a mother in the high education category, 36 % considered parental influence important compared with only 22 % in the low education category ($p<0.001$). Similar differences occurred in relation to parental occupation levels although they were smaller and not statistically significant.

The only other two factors for which there were any consistent and significant differences were 'Contact hours per week' and 'Unsure as to what else to do' with fathers' occupation and education levels. For the 'Contact hours per week' factor, tests with fathers' education and occupation levels were both significant ($p<0.001$ and $p<0.034$ respectively) with 10.4 % of those with a high education level father answering important compared with 20.1 % in the low education category. Similar differences occurred in relation to fathers' occupation levels. For the 'Unsure as

to what else to do' factor, tests with fathers' occupation and education levels were both significant ($p<0.011$ and $p<0.031$ respectively) with 22.6 % of those with a high occupation level father considering this factor important compared with 14.8 % in the low occupation category. Similar differences occurred in relation to fathers' education levels.

A possible explanation for this situation may be that as those with a father in a high occupation or education level were more greatly influenced and guided by their parents to undertake a particular course at university, they may have given less consideration to or been less aware of other options available to them than those who were not as influenced by their parents.

Higher Education Aspirations

With students' higher education aspirations regrouped into 'Higher degree' or 'Other', in all cross-tabulations of aspirations with parental occupation and education levels, those from advantaged backgrounds were more likely to aspire to a higher degree. χ^2-tests with fathers' occupation and education levels and mothers' occupation level were significant ($p<0.048$, $p<0.019$ and $p<0.028$ respectively). For each of the tests that were statistically significant, of those with a parent in a high occupation or education category, about 35 % aspired to a higher degree compared with about 27 % of those with a parent in a low category. This may be due to those having a parent in the high education category being given more support from parents who have experienced higher education themselves. Another possibility is that those from a lower socio-economic background may have little or no financial support from parents or elsewhere to go on to a higher degree and therefore do not consider undertaking a higher degree as a future option.

Language Background

In trying to locate socio-economic differences in the degree of non-English language usage, the responses 'English only' and 'Mainly English plus Other(s)' were grouped together as were the responses 'Other(s) only, no English' and 'Mainly Other(s) plus English'. With the data regrouped in this manner, χ^2-tests were conducted to find differences related to parental occupation and education levels.

All χ^2-tests of language usage with family and parental occupation and education

levels were significant ($p<0.005$). For each case, of those with a parent in the high occupation or education level, about 98 % used English mainly or only compared with about 93 % of those with a parent in the low occupation or education category. For language usage with friends, although a slightly higher proportion of those with a parent in a high occupation or education category used English mainly or only compared with those with a parent in the corresponding low category, none of these differences were significant.

With regard to specific non-English language usage with family or friends, namely, whether a non-English European or other non-English language was used, no consistent differences were found with respect to parental occupation or education levels. Also, there were no significant differences found in relation to how well the students rated their ability to read or write in their main non-English language and parental occupation and education levels.

Regarding the type of languages studied at primary or secondary school, namely, whether a non-English European language or another non-English language, of those who indicated that they had studied a non-English language, no significant differences were found relating to parental occupation levels. However, significant differences were to be found in relation to parental education levels. At the primary level, of those with a high education level father, 84.3 % of non-English language study was of non-English European languages compared with only 75.1 % for those with a father in the low education level ($p<0.037$). At the secondary level, of those with a mother or father in the high education category, about 90 % of non-English language study was of non-English European languages compared with about 85 % for those with a parent in the low education category ($p<0.05$ for mothers and fathers).

Differences were also found between the proportions of students from high or low socio-economic backgrounds who had undertaken non-English language study at primary or secondary school. The differences in relation to parental education levels were all statistically significant, whereas none of those relating to parental occupation levels were. At the primary school level, about 43 % of those with a high education level parent indicated that they had studied at least one non-English language compared with around 32 % of those with a low education level parent ($p<0.008$ for mothers and fathers). These differences were not as pronounced at the secondary school level where about 81 % of those with a parent in the high education

level indicated that they had studied at least one non-English language compared with around 75 % of those with a parent in the low education level, a difference which was statistically significant only in relation to students' fathers ($p<0.041$).

Ethnicity

With students' countries of birth recoded into the categories shown in table D. 1, the only significant difference was found in relation to fathers' education levels. Here, the greatest differences were found for the 'Asian' and 'Other non-English speaking' categories (table 4.19). Of those with a father in the high education level, 4.0 % were in the 'Other non-English speaking category' compared to only 1.4 % of those with

Table 4.19: Student's birthplace by father's education level.

Count Row % Column %	Fathers' Education Level		Row Total
	High	Low	
Australia	221 35.1 80.4	408 64.9 83.6	629 82.4
Other English speaking	25 44.6 9.1	31 55.4 6.4	56 7.3
Non-English European	8 42.1 2.9	11 57.9 2.3	19 2.5
Asian	9 20.9 3.3	34 79.1 7.0	43 5.6
Other non-English speaking	12 75.0 4.4	4 25.0 0.8	16 2.1
Column Total	275 36.0	488 64.0	763 100.0

$p<0.002$ for χ^2-test.

a father in the low education category. The reverse trend was the case for those born in an Asian language speaking country. Here, of those with a father from the high education level, 5.1 % were born in an Asian language speaking country compared with 8.4 % of those with a low education level father.

Cross-tabulating mother's/father's birthplace with mother's/father's occupation and education levels (table 4.20), significant differences were found for each case

Table 4.20: Mothers'/fathers' birthplace by mothers'/fathers' occupation and education levels.

Count Row % Column %	Mother						Father					
	Occupation Level[1]			Education Level[2]			Occupation Level			Education Level		
	High	Low	Signif.[3]	High	Low	Signif.[3]	High	Low	Signif.[3]	High	Low	Signif.[3]
Australia	194	298	0.004	129	367	0.059	302	167	0.000	185	302	0.006
	39.4	60.6		26.0	74.0		64.4	35.6		38.0	62.0	
	68.3	64.8		62.3	64.4		67.4	58.6		67.3	61.8	
Other English speaking	44	64		41	71		79	43		44	75	
	40.7	59.3		36.6	63.4		64.8	35.2		37.0	63.0	
	15.5	13.9		19.8	12.5		17.6	15.1		16.0	15.3	
Non-English European	20	618		19	75		27	59		21	71	
	24.7	75.3		20.2	79.8		31.4	68.6		22.8	77.2	
	7.0	13.3		9.2	13.2		6.0	20.7		7.6	14.5	
Asian language speaking	15	33		12	45		32	13		16	37	
	31.3	68.8		21.1	78.9		71.1	28.9		30.2	69.8	
	5.3	7.2		5.8	7.9		7.1	4.6		5.8	7.6	
Other non-English speaking	11	4		6	12		8	3		9	4	
	73.3	26.7		33.3	66.7		72.7	27.3		69.2	30.8	
	3.9	0.9		2.9	2.1		1.8	1.1		3.3	0.8	

[1]High: Professional/technical and administrative/managerial/executive categories. Low: Other.
[2]High: Degree or higher qualification. Low: Less than Degree.
[3]Significance of χ^2-tests of parents' birthplaces by parents' occupation levels.

except for mother's birthplace with mother's education level. For mothers, those in the 'Other non-English speaking country' and 'Other English speaking country' categories had the greatest proportions of those in the high occupation or education categories. Mothers born in a non-English speaking European country were the most likely to be in the low occupation or education categories followed by those who were Asian born.

The 'Asian' and 'Other non-English speaking' country of birth categories had the greatest proportions of fathers in the high occupation category whilst the 'Other non-English speaking', 'Australia' and 'Other English speaking' categories had the greatest proportion of high education level fathers. However, the group which stood out the most was fathers born in a non-English speaking European country, this group having the greatest proportion of those in the low occupation and education categories.

Thus based on parental occupation and education levels, it may be concluded that students with parents born in a non-English speaking European country generally had the lowest socio-economic backgrounds.

Social Interaction

Firstly, those students who identified with an Anglo-Celtic ancestral background (as indicated at question 22 of the questionnaire) are discussed. With the number of friends they considered to have of their own (Anglo-Celtic) cultural background (question 23 of questionnaire) regrouped into 'all three' or 'two or less', χ^2-tests were conducted on number of friends of Anglo-Celtic background by parental occupation and education levels. Although no statistically significant differences were found, in every case, a greater proportion of those with a parent in a low occupation or education level had all three friends of the same cultural background than those with a parent in a high occupation or education level. This suggests that Anglo-Celtic identifying students from higher socio-economic backgrounds are slightly more likely to socially integrate with those of a cultural background other than their own than are students from lower socio-economic backgrounds.

For students who identified with a specific ancestral background other than Anglo-Celtic, no significant or consistent differences were found in relation to the number of friends of Anglo-Celtic background they considered they had by parental occupation

or education levels.

4.2.3 Differences Related to Students' and Parents' Countries of Birth

In this section, differences related to students' and parents' countries of birth are investigated, apart from gender and socio-economic factors which have been discussed in earlier sections. As given in table D.2, the countries of birth have been recoded into the categories 'Australia', 'Other English speaking', 'Non-English European', 'Asian' and 'Other non-English speaking'. Due to the low numbers involved in the 'Other non-English speaking' category, unless specifically mentioned, this group was generally not discussed.

Age

The only significant differences found between ages of students born in different countries were between those students born in an English speaking country other than Australia and those born in Australia or 'Other non-English speaking' country. Those born in an English speaking country were the oldest with a mean year of birth of 1965.3. Those born in Australia or 'Other non-English speaking' were the youngest groups with mean years of birth of 1970.0 and 1971.7 respectively. When mothers' birthplaces were considered, the only significant difference found was between those with a mother born in Australia and those with a mother born in another English speaking country, the mean years of birth being 1969.9 and 1967.8 respectively. No significant differences were found in relation to fathers' birthplaces.

Semester Residence

Table 4.21 below gives the cross-tabulation of students' and parents' birthplaces with whether the student's semester time residence was with parents/guardians or not. As would be expected, Asian born students or students with an Asian born parent were the most likely not to be living at home with their parents or relations due to the large number of overseas students within these groups. With respect to student birthplace, those born in a non-English speaking European country were the next most likely, after Asian students, not to be living at home with 60 % living at home compared with

Table 4.21: Student's and students' parent's birthplace by semester residence.

Count Row % Column %	Student		Mother		Father	
	Parent[1]	Other[2]	Parent	Other	Parent	Other
Australia	451	198	347	162	345	158
	69.5	30.5	68.2	31.8	68.6	31.4
	84.8	76.4	65.2	62.3	65.0	61.0
Other English speaking	41	18	77	38	90	37
	69.5	30.5	67.0	33.0	70.9	29.1
	7.7	6.9	14.5	14.6	16.9	14.3
Non-English European	12	8	68	25	66	25
	60.0	40.0	73.1	26.9	72.5	27.5
	2.3	3.1	12.8	9.6	12.4	9.7
Asian	16	31	25	32	20	36
	34.0	66.0	43.9	56.1	35.7	64.3
	3.0	12.0	4.7	12.3	3.8	13.9
Other non-English speaking	12	4	15	3	10	3
	75.0	25.0	83.3	16.7	76.9	23.1
	2.3	1.5	2.8	1.2	1.9	1.2

Student : $p<0.001$; Mother: $p<0.002$; Father: $p<0.001$ (for χ^2-test).
[1] Parent: living with parents.
[2] Other: not living with parents.

70 % of those born in Australia or another English speaking country. When parental birthplace was considered, however, the differences between those with a parent born in Australia, another English speaking country or a non-English speaking European country were small, but with the latter group having a slightly higher tendency to be living at home with parents, a reverse of the situation when student birthplace was considered. The numbers involved with the 'Other non-English speaking' category were too small to make any meaningful conclusions.

Financial Support

Where dependence on AUSTUDY was concerned, the tendency was for those with an Australian or other English speaking country born parent to have a lower dependence than those with a parent born in an Asian or non-English speaking European country. Of those with an Australian born father, 65 % indicated that they did not rely on AUSTUDY at all compared with 65 %, 50 % and 55 % of those with a father born in another English speaking country, non-English speaking European country or Asia respectively. Similar differences also occurred with regard to mothers' birthplaces.

In relation to dependence on casual or part-time work, a greater proportion of those with an Australian or other English speaking country born parent depended ended to on this financial source than those with a parent born in an Asian or non-English speaking European country. This can most likely be explained by the fact that the reverse trend occurs in relation to dependence on AUSTUDY, those not able to obtain a high level of AUSTUDY being more likely to have to undertake casual or part-time work for financial support. Of those with an Australian born father, 28 % indicated that they did not rely on casual or part-time work at all compared with 20 %, 40 % and 49 % of those with a father born in another English speaking country, non-English speaking European country or Asia respectively. A similar pattern also occurred in relation to mothers' birthplaces.

Regarding dependence on parents/guardians for financial support, no significant differences were found related to students' or parents' birthplaces.

Secondary Schooling

As a large proportion of students with an Asian parent had their secondary schooling overseas, only those students who indicated that they had an Australian, another English speaking country or a non-English speaking European country born parent were considered here. The main differences in participation in various secondary schooling sectors in relation to parental birthplace occurred in the Catholic, independent and TAFE sectors. For the state school sector, no notable differences in relation to fathers' or mothers' birthplaces were found, this sector containing around half of each group of students who had a parent born in Australia, another English speaking country, or a non-English speaking European country.

The Catholic school sector was most favoured by those with a father born in a non-English speaking European country, of whom 28 % last attended a Catholic school compared with 12 % and 18 % of those with a father born in Australia or another English speaking country respectively. The independent school system was clearly favoured by those with an Australian born father, of whom 33 % last attended an independent school compared with only 18 % and 8 % of those with a father born in another English speaking country or a non-English speaking European country respectively. The reverse was the case when the TAFE sector was considered. Here, only 4 % of those with an Australian born father last attended a TAFE college com-

pared with 11 % and 9 % of those with a father born in another English speaking country or a non-English speaking European country respectively.

Similar differences to the above occurred in relation to mothers' birthplaces.

University Course Related Variables

Although no statistically significant differences were found between the proportions of students enrolled full or part-time in relation to parental birthplace, those with an Asian born parent were the most likely to be studying full-time.

In regard to whether students were enrolled in their first preference course as stated on their SATAC application or not, differences were found relating to parental birthplace. Those with a father born in an English speaking country other than Australia were the most likely to be enrolled in their first preference course at 74 % followed by 72 % and 68 % of those with an Australian born or Asian born father respectively. Those by far the least likely to be enrolled in their first preference course at 56 %, were those with a non-English speaking European father. Very similar differences were found in relation to mothers' birthplaces.

Significant differences were also found in relation to parental birthplace and the subject students were enrolled in. As can be seen in the cross-tabulation of parental birthplace and subject enrolled (table 4.22), students with an Asian born father or mother were by far the least likely to be studying English I, with only 14 % of those with an Asian born father studying this subject compared to over 31 % of those with a father from the other categories. This can be partially explained by the earlier finding that Asian students were the most likely to choose a course with a view to avoiding written English. On the other hand, those with an Asian born father were by far the most likely to be studying Economics I with 46 % doing so compared with less than 17 % of those with a father from each of the other country of birth categories. Differences in proportions studying Chemistry I were not as large as for English I or Economics I, those most likely to be studying Chemistry I being those with a father born in a non-English speaking European country (56 %) followed by those with a father born in an English speaking country other than Australia (53 %).

In order to locate differences between the importance placed on various factors that could have influenced the choice of course, χ^2-tests were conducted for each factor with parental birthplace. Due to the low numbers involved in the 'Other

Table 4.22: Parental birthplace by subject enrolled in.

Count Row % Column %	Father			Mother		
	Subject Enrolled in			Subject Enrolled in		
	English I	Chemistry I	Economics I	English I	Chemistry I	Economics I
Australia	199	230	85	201	238	84
	38.7	44.7	16.5	38.4	45.5	16.1
	68.4	60.5	61.2	68.6	62.6	60.4
Other English speaking	47	69	15	42	59	16
	35.9	52.7	11.5	35.9	50.4	13.7
	16.2	18.2	10.8	14.3	15.5	11.5
Non-English European	30	53	12	29	53	14
	31.6	55.8	12.6	30.2	55.2	14.6
	10.3	13.9	8.6	9.9	13.9	10.1
Asian	8	23	26	10	24	24
	14.0	40.4	45.6	17.2	41.4	41.4
	2.7	6.1	18.7	3.4	6.3	17.3
Other non-English speaking	7	5	1	11	6	1
	53.8	38.5	7.7	61.1	33.3	5.6
	2.4	1.3	0.7	3.8	1.6	0.7

For χ^2-test, $p<0.001$ for both father and mother.

non-English speaking' country category, this category was omitted from the analysis. The factors for which there were significant differences related to parental birthplace are shown in table 4.23. The group which stood out the most was those with an Asian born parent. A greater proportion of these students considered the influential course choice factors 'Contact hours per week', 'To avoid written English', 'Parents' attitudes and influence' and 'Prestige or status involved' as important than students

Table 4.23: Proportions considering influential course choice factors important by parental birthplace.

Count Column %		Aust.	Other English Speaking	Non-English European	Asian	Signif.[3]
Contact hours per week	M[1]	74 14.5	17 14.8	19 20.2	17 30.4	0.0152
	F[2]	67 13.4	21 16.2	21 22.6	19 35.2	0.0002
To avoid written English	M	26 5.2	10 8.9	9 9.8	8 14.5	0.0275
	F	28 5.7	10 7.9	4 4.3	10 18.9	0.0023
Parents' attitudes and influence	M	108 21.5	32 28.1	25 27.2	22 39.3	0.0171
	F	113 23.0	27 20.9	28 30.4	22 40.7	0.0125
Prestige or status involved	M	129 25.6	25 22.3	34 37.0	25 44.6	0.0022
	F	122 24.7	33 26.0	35 38.0	24 44.4	0.0020

[1]Mother
[2]Father
[3]Significance relating to χ^2-test of 'Important' and 'Not important' responses by parental birthplace.
Note: the 'Other non-English speaking' category has not been included here due to small numbers.

without an Asian born parent. Although no significant differences were found in relation to the 'Financial rewards at end of course' factor, those with an Asian born parent were again the most likely to consider this factor an important one in choosing their course.

After those with an Asian born parent, those with a parent born in a non-English speaking European country were most likely to consider the factors 'Contact hours per week' and 'Prestige or status involved' as important course choice factors. Incon-

sistent differences related to mothers' and fathers' birthplace occurred with regard to the 'Parents' attitudes and influence' factor. Here, those with a father born in a non-English speaking European country were most likely to consider this factor important after those with an Asian born father, whereas those with a mother born in an English speaking country other than Australia were most likely to consider this factor important after those with an Asian born mother (see table 4.23).

Although the numbers involved were small, it is interesting to note that for the 'To avoid written English' factor, the difference between the proportions of students with a 'non-English speaking European' or 'Other English speaking' mother who considered this factor important was quite small but where students' fathers were concerned, those with a father in the 'Other English speaking' category were in fact more likely to place importance on avoiding written English when choosing a course than those with a father in the 'non-English speaking European' category.

In regard to differences related to parental birthplaces and influential course choice factors, table 4.23 also reveals that the most significant and greatest differences occurred with respect to the father rather than the mother. This has also been noted earlier when dealing with other data related to students' mothers and fathers.

Higher Education Aspirations

With student aspirations towards a higher degree recoded as 'higher degree' or 'less than a higher degree', no significant differences were found relating to parental birthplaces and aspirations towards higher education. Even with parental birthplaces considered as being either an English speaking country or non-English speaking country no significant differences were apparent, although slightly greater proportions of those with a parent born in an English speaking country generally aspired to a higher degree than those with a parent born in a non-English speaking country.

Languages Used With Family and Friends

The proportions of students speaking a language other than English mainly or only with family and friends by students' and students' parents' birthplaces are shown in table 4.24. Although the numbers involved are quite small in many cases, a number of meaningful observations were still made. Asian born students or students with an Asian parent were by far the most likely to use a language other than English with

Table 4.24: Proportion of students speaking a language other than English mainly or only with family and friends by students' and students' parents' birthplaces.

Count Row %	Student		Father		Mother	
	Family	Friends	Family	Friends	Family	Friends
Australia	12	0	0	1	1	0
	1.8	0.0	0.0	0.2	0.2	0.0
Other English speaking	0	1	1	0	1	0
	0.0	1.7	0.8	0.0	0.9	0.0
Non-English European	7	1	18	1	17	2
	35.0	5.3	19.4	1.1	18.1	2.2
Asian	25	12	25	12	26	13
	54.3	26.1	45.5	22.2	46.4	23.2
Other non-English speaking	2	2	2	2	1	1
	12.5	12.5	15.4	15.4	5.6	5.6

their family or friends at 54 % and 46 % respectively.

Those born in, or with a parent born in a non-English speaking European country were the next most likely not to use English with their family at 35 % and around 19 % respectively. Language usage with friends was, however, virtually all English except for a very small number of students. Language usage for those born in, or with a parent born in, an English speaking country was virtually all English.

The relative proportions of those born in and those with a parent born in a non-English speaking European country who used a language other than English also gives an indication of ethnic language maintenance in Australia. The fact that 35 % of students born in a non-English speaking European country spoke a language other than English with their family compared with around 18 % of those who had a mother or father born in a non-English speaking country (most of these students being born in Australia) indicates that language maintenance among non-English speaking background second generation immigrants is much less than for first generation immigrants.

When the question of non-English language maintenance was investigated in more detail, the erosion of language maintenance in the second generation was found to be very dramatic. All students who had either a mother or father born in a non-English speaking country were considered. Of these students, 46 % of those who were themselves born in a non-English speaking country spoke a language other than English with their family compared with only 9 % of those students who were born

in an English speaking country (including Australia). Thus the maintenance of a non-English speaking country born parent's language in their offspring is strongly dependent on the child being born in the non-English speaking country.

Non-English Languages Studied at Primary and Secondary Schools

In comparing the proportions of students who had studied a non-English language at primary or secondary school in relation to their parents birthplaces, only those students who were born in Australia were considered. This eliminated most, if not all students who had some of their primary or secondary education in a non-English speaking country. Table 4.25 gives the results found.

Although numbers were quite small for some specific categories, some consistent results were found. For primary schooling, students whose mother or father was born

Table 4.25: Percentage of Australian born students who studied at least one language other than English at primary or secondary school by parental birthplace.

Parents country of Birth	At least[1] one LOTE[2] studied at Primary.		At least[1] one LOTE[2] studied at Secondary.	
	Mother			
	N	%	N	%
Australia	169	34	407	81
Other English speaking	29	41	55	79
Non-English speaking European country	35	48	59	81
Asia	5	38	11	85
	Father			
	N	%	N	%
Australia	172	35	392	80
Other English speaking	30	35	67	79
Non-English speaking European country	34	46	65	88
Asia	4	44	9	100

[1]The term 'at least' is used here as some students who did not respond to the question may have studied a language other than English at primary or secondary school.
[2]LOTE: Language Other Than English.

in Australia had the lowest proportion who had studied a language other than English, 34 % and 35 % respectively. On the other hand, those with a mother or father

born in a non-English speaking European country consistently had the highest proportions who had studied a language other than English, 48 % and 46 % respectively. For those with a mother born in an English speaking country other than Australia, 41 % had studied a non-English language at primary school compared with 35 % of those with a father born in an English speaking country other than Australia. Of those with an Asian mother or father, 38 % and 44 % had studied a non-English language at primary school respectively.

When the figures for secondary schooling were considered, the differences found were not as large. When mothers' birthplaces were considered, no notable differences were found (see table 4.25). When fathers' birthplaces were considered, the most notable difference found was between students with a father born in an English speaking country (including Australia), of whom around 80 % had studied a language other than English, and those with a father born in a non-English speaking European country, of whom 88 % had studied a language other than English at secondary school. Students with an Asian parent consistently had the highest proportions who had studied a language other than English, however, the numbers here were too small to draw any meaningful conclusions.

Thus overall, the results indicate that for students born in Australia (and thus most of these students had their primary and secondary schooling in Australia), those with a parent born in a non-English speaking country had a greater tendency to study a language other than English during their primary or secondary schooling than those with a parent born in an English speaking country (including Australia). There are a number of possible reasons for this. One may be that parents born in a non-English speaking country will encourage their children to learn the mother tongue of their (the parent's) country of birth due to a desire to preserve the language. Another may be that the student had some knowledge of a language other than English due to one or both of their parents using same and so decided to study this language at school knowing they had a 'head start' or that they had a parent who could help them with this language. In contrast, those with both parents born in Australia are less likely to have a parent who could help them in their study of a language other than English and were therefore less likely to study one.

To further investigate the above mentioned possibilities, three of the largest non-English speaking birthplace categories for parents were chosen, namely, Germany,

Italy and Greece (see table C.5). The proportions of all Australian born students who had studied German, Italian or Greek were then compared with the proportions of Australian born students who had studied these same languages but who also had at least one parent born in Germany, Italy or Greece respectively. The results are presented in table 4.26. Again, although numbers were generally quite small, consistent results were found. For both primary and secondary schooling, much greater proportions of students with at least one parent born in Italy or Greece

Table 4.26: Proportion who studied German, Italian or Greek in primary or secondary school by parental birthplace.

Language studied	Percentages studying specified language.			
	All Aust^n born students.		At least one parent born in language country[1].	
	Primary School			
	N	%	N	%
German	66	8	2	7
Italian	77	9	12	50
Greek	17	2	5	83
	Secondary school			
	N	%	N	%
German	233	29	18	64
Italian	66	8	18	75
Greek	9	1	4	67

[1]That is, Germany when German is being considered, Italy when Italian and Greece when Greek.

studied Italian or Greek respectively than for the Australian born student sample as a whole. Similarly, a much greater proportion of students with at least one parent born in Germany studied German in secondary school than the sample as a whole. The only inconsistent result was for the study of German in primary school where those with a parent born in Germany were not more likely to have studied German than Australian born students as a whole.

Ethnic Identity

Of those students born in Australia, only 68 % considered their ancestry to be Anglo-Celtic, 17 % non-Anglo-Celtic European and 7 % mixed. Those students born in an English speaking country other than Australia were the most likely to see them-

selves as having an Anglo-Celtic ancestry with 90 % doing so while 7 % considered themselves to be of non-Anglo-Celtic European background. A non-Anglo-Celtic European identity was most likely for those students born in a non-English speaking European country with 70 % of these students identifying most closely with this ancestral category. Almost all students born in Asia identified with an Asian ancestry or as an overseas student.

Table 4.27 gives the ancestral identification of students who had both of their parents born in the same category of country. For students who had both parents born in Australia, only 78 % identified with an Anglo-Celtic ancestral background whilst 11 % identified with a non-Anglo-Celtic European background. This suggests that many look back to their grandparents country of origin in arriving at what they consider their own identification to be, rather than consider themselves as 'Australian' or Anglo-Celtic. The group of students with both parents born in Australia also had the equal highest proportion, 10 %, who considered themselves of mixed ancestry or who did not identify with any ancestral background. Almost all students who had both their parents born in an English speaking country other than Australia, 89 %, identified most closely with an Anglo-Celtic background.

Of students with both parents born in a non-English speaking European country, the vast majority, 82 %, identified most closely with a non-Anglo-Celtic European background whilst 10 % considered themselves of mixed ancestry or did not identify with any ancestral background. All students, except one, with both parents Asian identified with an Asian background or indicated that they were overseas students.

In order to try and establish whether a student's perception of their ethnic identity was more likely to be determined by the mother's or father's cultural background, students whose parents were born in different birthplace categories were identified. The first question investigated was if there were differences in identification with Anglo-Celtic background, depending on whether the mother or father was of Anglo-Celtic origin. The general assumption made here was that fathers and mothers born in an English speaking country were deemed to be most likely 'Anglo-Celtic', whilst those born in a non-English speaking country were deemed to be most likely 'non-Anglo-Celtic'. Of the 37 students with a mother born in an English speaking country and a father born in a non-English speaking country, 31 % identified specifically with an Anglo-Celtic ancestry. On the other hand, 40 % of the 44 students with a father

Table 4.27: Students' ancestoral identification for students with both parents born in the same category of country.

Ancestoral Identification	Students with both parents born in:							
	Australia		Other English speaking country		Non-English speaking European country		Asia	
	N	%	N	%	N	%	N	%
Anglo-Celtic	331	77.9	58	89.2	2	3.2	0	0.0
Non-Anglo-Celtic European	48	11.3	2	3.1	51	82.3	0	0.0
Asian	1	0.2	0	0.0	0	0.0	30	62.5
Other Specific	4	0.9	0	0.0	3	4.8	0	0.0
Mixed Ancestory	21	4.9	3	4.6	3	4.8	1	2.1
None	20	4.7	2	3.1	3	4.8	0	0.0
Overseas student	0	0.0	0	0.0	0	0.0	17	35.4
Totals	425	100.0	65	100.0	62	100.0	48	100.0

born in an English speaking country and a mother born in a non-English speaking country identified specifically with an Anglo-Celtic background. Although this difference was not statistically significant, the results suggest that students were more likely to identify with the father's ancestral background rather than the mother's in relation to Anglo-Celtic identification.

A similar analysis was also carried out with regard to non-Anglo-Celtic European identification. Here, fathers and mothers born in a non-English speaking European country were deemed to be most likely 'non-Anglo-Celtic European'. Of the 32 students with a mother born in a non-English speaking European country and a father born elsewhere, 35 % identified specifically with a non-Anglo-Celtic European ancestry. On the other hand, of the 31 students with a father born in a non-English speaking European country and a mother born elsewhere, 53 % identified specifically with a non-Anglo-Celtic European ancestry. Again, although this difference was not statistically significant, it points to the father being more influential than the mother with regard to students' identification with a non-Anglo-Celtic European ancestry.

The numbers of students with one Asian parent and another born elsewhere were too low to do a similar meaningful analysis with regard to Asian ancestral identification.

Very little, if any research appears to have been done with regard to whether those with a mother with a different ancestral background or ethnic identification to the father, identify more with the mother's or father's ethnicity. One indication was given by Price and Pyne (1976) who argued that 'it is the culture and language of the mother rather than of the father which on the whole determine the cultural and linguistic habits of the family.' (in Sturman, 1985, p. 59). However, this claim conflicts with the above finding of the 1990 survey that the father's background was more influential than the mother's with regard to the ancestral identification of the offspring.

4.2.4 Other Differences Related to the Subject Enrolled in

Course Preference

Those students enrolled in Economics I had the greatest proportion of students claiming to be enrolled in their first preference course with 85 % doing so followed by 79 %

for English I and only 58 % for Chemistry I students.

Of Chemistry I students not in their first preference course, medicine, health science or dentistry was the most preferred category of courses with 41 % wishing to do these. Engineering courses were next in favour at 20 %. Law was not indicated to be a preference by any Chemistry I student in the survey.

Economics and journalism were the most preferred courses for English I students not in their first preference course at 36 % and 15 % respectively. Law was amongst the least preferred courses for English I students not in their first preference course at 3.4 % (2).

For Economics I students not in their first preference course, the largest proportion was 39 % (7) who wished to be enrolled in Economics. These students were probably able to study Economics I towards their current degree with the view to transferring later to an Economics degree. Law was the next most preferred course at 17 % (3).

Higher Education Aspirations

Students enrolled in Economics I or English I were the least likely to aspire to a higher degree with only 21 % and 27 % wishing to do so respectively. Students enrolled in Chemistry I were by far the most likely to aspire to a higher degree with 35 % wishing to do so.

4.3 What Students Hoped to Gain Through Their Study at the University

This section contains the analysis of responses to the open ended question 'What do you hope to gain from your studies at the university ?' (question 24 of the questionnaire). A total of 687 (84 %) students gave a response to this question. The vast majority of responses fell into four main categories, namely, career and financial related gains, social and cultural gains, self improvement gains, and other gains directly attributable to the course of study at university.

4.3.1 Career/Financial Gains

By far the most significant gain that students saw themselves having from their study at university had to do with their current or hoped for career. For 324 students, or about half of all respondents, a hoped for gain was improved chances of getting a job at the end of their studies, or that they would have a wider choice of career options. For some students, enhanced career prospects was the only perceived gain from university study as the following quotes illustrate:

- Nothing more than the required qualifications for a career in scientific research
- A degree and a chance to get a better job than if I had gone straight out into the workplace after completing Matric.

  Basically, a better job is the main reason I am at Uni.

The importance of career and financial prospects is further emphasised by the fact that for 209 students, or about a third of all responses, career or financial gains were the *only* mentioned gains from university study.

This group of 209 students may be broken down further. For 98 of these students, getting a job was the only mentioned gain with most responses being 'a job', 'a good job' or 'a good secure job'. Ninety five students explicitly indicated that they hoped for more than merely better chances of getting a job, namely, that the job would be satisfying, rewarding, challenging, enjoyable or be higher paying than a job they would otherwise be in without a university education. For example:

- ...to obtain a rewarding and satisfying job at the end of study
- be able to move into an interesting and fulfilling career
- A satisfying and rewarding occupation with which I shall be comfortable for the rest of my life.

It is quite likely that more than 95 students in the sample had these hopes as students who responded with only 'a good job' may define a 'good job' as a high paying one or one that is personally satisfying, rewarding or challenging.

Enhanced job prospects and high pay were the only mentioned gains for 37 students, for example:

> A good job, hopefully a well paying one, because that's what I'm studying for.

The remaining 16 students of the 209 mentioned *only* money, better pay or a wealthy future as their hoped for gain.

Overall, 81 students hoped for a satisfying, rewarding, challenging or enjoyable job. Similarly, 99 students hoped that university study would give them a high paying job, an opportunity to move up the salary scale in their present occupation, a wealthy future, or just money *per se*.

Other groups of responses were an opportunity to change one's current career, mentioned by 15 students, and the chance to make some business contacts whilst studying at university, this being mentioned by 3 students.

So although many students see the main reason for a university education as a means to increase their chances of getting a job or a higher paying job, a number of students also saw it as leading to a more satisfying or rewarding career path than if they had stayed in or entered a job on having completed their secondary schooling, as the following students clearly indicated:

- An opportunity to enter an occupation which I will find a challenge intellectually and so would be rewarded by the job. I work part-time in a restaurant and do not want to spend the rest of my life as just a dumb blonde who cleans up tables.
- An understanding of Physics, Chemistry and Biology along with a certificate of achievement enabling me to get a job other than a supermarket checkout!

4.3.2 Social/Cultural Gains

After career and financial gains, social interaction and understanding were the next most prevalent gains that students hoped for. Ninety two students hoped that studying at university would provide them with opportunities to meet new people, make friends or have a more varied social life generally. Around 20 of these students mentioned further that they hoped to meet people from a diverse range of social and cultural backgrounds and to understand other people better through their interactions with them as the following quotes indicated:

- I also wish to be able to interact with people who are different to me and gain greater understanding from that.
- friends from wider cultural backgrounds

- Also an opportunity to socialise with and experience the cultures of those of my nationality and other nationalities [Anglo-Celtic identifying student]
- Able to meet a wide variety of people with different social and cultural backgrounds
- I also feel it will be a positive experience for meeting other people and increasing my awareness of the diversity of individuals' attitudes and cultures. [Anglo-Celtic identifying student].

These quotes illustrate students' positive attitude towards a culturally plural society and their desire to interact with others from different cultures and to learn from these interactions.

From the whole sample, 25 students specifically wrote that they hoped to gain a greater understanding of society and other societies, or to learn about different attitudes and cultures through their studies at the university, for example:

> A more in-depth understanding of the functioning of society and its current issues and possible solutions to problems.

The next most popular response after meeting people and making friends was given by 47 students, namely, to enjoy oneself or have a good time whilst at university.

4.3.3 Self Improvement Gains

One of the more popular responses, given by 59 students, was that they hoped that university study would give them self satisfaction, fulfillment, or a sense of personal achievement. The opportunity to mature, develop personality or to improve character whilst at university was mentioned by 24 students. Fewer students, 11, hoped that they would gain more confidence, self esteem or independence as a result of studying at university.

Ten students hoped to improve their self expression or communication skills, for example:

- ... some useful skills in communication, expression ...
- The ability to express my thoughts and opinions in an articulate manner.
- Better communications with others.

Four students specifically mentioned that they hoped to improve their English as a student born in Yugoslavia wrote:

To have a better understanding of English language and literature.

Other self improvement gains mentioned by a handful of students were to get some direction in life, improve self discipline and concentration and to be able to think independently.

4.3.4 Benefits Related Directly to the University

The largest response here, 361, was that the hoped for gain was a degree, knowledge, an education, or information. For some, a degree or qualification was the only perceived gain. Only 36 students out of the above group specifically mentioned that they hoped their study would be challenging, rewarding, intellectually stimulating or enjoyable, for example:

- Enjoyable life while doing a challenging and rewarding course.
- An interesting, challenging, course of study that will expose me to a wide range of people and knowledge.

Twenty six students mentioned that they saw their current studies leading on to post-graduate education, that is, either Honours, Masters or Doctorate.

4.3.5 The Ability to be Able to Better Serve Society

Only very few students, 14, explicitly indicated that they hoped that their studies at university would enable them to contribute more to society or help others. The quotes of some who did were:

- Satisfaction and a sense of finally doing something for myself – something that will enable me to help others and become a benefit to society in some way
- I hope to become a more responsive contributing member of society
- A bachelor of Law and therefore a broader understanding of society, and the ability to better serve it.

Some ethnic students specifically mentioned that they hoped they would be able to better help their own people. Two students concerned here were Vietnamese. One wrote:

> I hope to gain a better understanding of the world that surrounds us, to gain knowledge which can be used to help people (but mostly people from my own background).

The other Vietnamese student wrote that she hoped to be able to help her people with the language barrier. An overseas student from Singapore hoped that university studies would enable her to better serve at the school she taught at in Singapore.

4.3.6 Summary and Comparisons With Previous Research

The above findings indicate that students primarily view their university education as a means of enhancing their chances of obtaining employment. Further, they hoped that their study at university would enable them to get employment more satisfying, rewarding, challenging or enjoyable than if they had entered employment on leaving secondary school. Similarly, they hoped that having a university qualification would lead to higher paid positions or a wealthier future in general.

After career, the opportunity to meet new people and make new friends at university were the next most common gains mentioned, with a handful of these students specifically mentioning that they hoped to meet people from a diverse range of social or cultural backgrounds. Related to social gains, a number of students specifically mentioned that they hoped to have an enjoyable social life and generally have fun whilst at university.

Third ranked in hoped for gains was self satisfaction, fulfillment or personal achievement. A number of students also hoped that in doing their university studies they would personally develop, mature, improve their character, become more independent or gain more confidence or self esteem.

The above finding that students primarily view their university education as a means of obtaining a job that earns good money is supported by the findings of a national study commissioned by the Special Minister of State to investigate the attitudes of young Australians aged 15–24, *The New Traditionalism: A Study of Young Australia* (ANOP, 1984). In summing up the findings of the study, Smolicz (1988) wrote:

> ... the study found that young Australians' view of life in the 1980s was dominated by (in order) (a) jobs and money, (b) family and social relationships, and (c) education, seen mainly as having the function of helping to gain (a).

Power et al. (1985), in their study of 1985 entrants to South Australian higher education institutions, also investigated students' motives for undertaking tertiary education. Power classified students' motives into three categories, namely, economic, educational and social-personal. These categories of motives were described as follows:

> Economic motive scores were derived from items which asked students how important improved earning capacity, career prospects and obtaining a good job were in arriving at the decision to continue their education. Educational motive scores reflect the emphasis given to the intrinsic value of study, educational qualifications and personal enrichment, while social-personal motive scores relate to the degree to which students wished to overcome a disadvantage, were dissatisfied with their current situation and see in higher education an opportunity to overcome their difficulties. (p. 57.)

The findings of Power, for 1985 entrants to the University of Adelaide, are given in table 4.28. These data agree with the findings of the 1990 survey that the students'

Table 4.28: 1985 entrants to the University of Adelaide: reasons for continuing education.

	Economic Motive	Educational Motive	Social Personal Motive
	%	%	%
Low	9	5	70
Medium	30	55	26
High	51	40	4

Source: Power et al., 1985, p. 56.

main motive for undertaking university study was economic or career related.

Although the gain hoped for by most students who responded to the 1990 survey, that of employment, is a *future* gain, benefits anticipated *during* their time at university were also quite frequently expressed in the form of social and self improvement gains. It is interesting to note that although 81 students hoped that their future employment would be challenging, interesting, rewarding, satisfying or enjoyable, only 36 students hoped that their current studies would possess these same characteristics.

Chapter 5

The Academic Achievement of Students – 1990 Studies

This chapter consists of the analysis of students' 1990 academic results and the cross-analysis of this information with the questionnaire data. Factors such as gender, age, semester residence, sources of financial support, socio-economic background, type of secondary schooling, part-time or full-time enrolment, course choice factors, language spoken at home, languages other than English studied at secondary school or university, students' and parents' countries of birth, and degree of social integration were investigated in relation to academic achievement.

The main measures of academic achievement used in the cross-analysis of the questionnaire survey data were whether or not a student passed 100 % of the subjects initially enrolled in, the Grade Point Average (GPA) of subject results, Student Progression Ratios (SPR), and the mean proportion of course load withdrawn without fail. The construction of these measures of academic achievement were discussed in sections 3.2.1 and 3.2.2.

Comparisons of findings were made with academic achievement data compiled by Power et al. (1986 & 1987) on 1985 entrants to the University of Adelaide and higher education institutions in South Australia generally (see section 2.4). Findings were also compared with the findings of other researchers given in chapter two, in order to ascertain whether or not the progression and achievement rates of students in this study were different from those of five years ago, and whether or not the current findings agree or disagree with previous research.

5.1 General Academic Achievement Information

This section deals purely with the data obtained from the academic transcripts and with the student sample population as a whole. General information such as course loads and pass rates will be given. The number of students for whom an academic transcript was obtained was 575, with 499 (86.8 %) of these enrolled in the University of Adelaide for the first time.

5.1.1 Course Loads

Each subject at the University of Adelaide is worth a specific number of 'points'. A total of 24 points of study in any one year constitutes a full year's load. The subjects studied in 1990 by the students in this sample ranged in points value between 1.5 and 8 points. Table 5.1 gives the number of points initially enrolled in as a percentage of full-time course load and the proportion of students falling into each interval whilst table 5.2 gives a histogram of the total number of points in which students initially enrolled. Just over 61 % of students initially enrolled in a 100 % workload in 1990

Table 5.1: Course load – total number of points enrolled.

% of full-time load*	Points	N	%
More than 100	24+	105	18.4
100	24	351	61.4
75 to 99	18-23	68	11.9
51 to 74	13-17	9	1.6
50	12	13	2.3
Less than 50	3-11	26	4.5
Total		572	100.0

* 24 points constitutes a full-time load.

whilst 18 % (105) attempted an overload. Part-time students, those enrolled in less than a 100 % load, accounted for 20 % of the sample. Students who only undertook a load of up to 75 % represented only 8.4 % of the sample indicating that over half of the part-time students were enrolled with a load of three quarters or more of a full-time load.

Of the 105 students who attempted a load greater than 100 % (24 points), the majority, 72, had a load of 27 points representing an overload of a one semester

Table 5.2: Histogram of total number of points in which students initially enrolled.

Count	Midpoint	One symbol equals approximately 8.00 occurrences
0	4.5	
18	6.0	**
0	7.5	
6	9.0	*
2	10.5	
13	12.0	**
2	13.5	
5	15.0	*
2	16.5	
25	18.0	***
1	19.5	
33	21.0	****
9	22.5	*
351	24.0	**********
7	25.5	*
72	27.0	*********
4	28.5	*
18	30.0	**
3	31.5	
1	33.0	
0	34.5	

20 40 60

Histogram percentage

Total cases = 572

Mean 23.02 Median 24.00 Mode 24.00

subject whilst 18 had an overload of 6 points representing an overload of one full first year subject. The relationship between course load and subsequent academic achievement will be investigated later.

5.1.2 Overall Academic Achievement

Table 5.3 gives the percentages of students achieving particular academic achievement levels for various proportions of their course load. Three quarters of students failed to obtain any distinctions at all whilst only 8 % of students obtained distinctions for 50 % or more of their course. About 29 % of students completed at least one subject for which they gained a fail grade, and 21 % completed but failed a quarter or more of their total enrolment.

Table 5.3: Proportion of course passed at various levels of academic achievement.*

% of total enrolment	Dist^n	Credit	Pass	Fail	Incomp. fail	Withdraw no fail	Withdraw with fail
50 to 100	8.0	22.0	50.0	8.4	1.2	7.9	0.5
25 to 49	8.0	23.1	18.2	12.8	4.2	5.8	0.7
1 to 24	8.4	14.9	8.7	7.5	2.8	6.3	1.7
None	75.5	40.0	23.1	71.3	91.8	80.1	97.0
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Cell values are the percentage of students achieving the specified academic achievement level for the indicated proportion of total course load.

Students who had a component of withdrawal without failure accounted for 20 % of the sample. Only 3 % of students had a component of withdrawal with failure in their course. The percentage of the students who withdrew (with or without failure) *completely* from their course during 1990 was 5.1 %.

Table 5.4 presents the percentages of students who passed (distinction, credit or pass) various proportions of their initial course load. A 100 % pass rate was achieved by only 57.0 % of the sample. On the other hand, 18 % passed less than 50 % of their

Table 5.4: Overall Student Progression Rates (SPR).

% of total enrolment passed	N	%
100	326	57.0
75 to 99	79	13.8
50 to 74	64	11.2
1 to 49	48	8.4
None*	55	9.6
Total	572	100.0

* Includes fail, withdrawal with & without fail, and incomplete fail.

course.

In the study of 1985 entrants to higher education institutions in South Australia by Power et al. (1986), a 'Student Progression Ratio' was calculated to measure student achievement. This same ratio was calculated for students in the 1990 sample (see section 3.2.1 for information on the construction of the Student Progression Ratio). For the whole 1990 sample, the SPR (Student Progression Ratio) was 0.77.

In other words, the mean proportion of course load passed by students was 77 %. This rate cannot, however, be directly compared with the SPR calculated by Power et al. (1987) for 1985 entrants to the University of Adelaide as Power's sample consisted of all entrants to the University whereas the 1990 sample consisted principally of students in science, arts and economics courses (see table C.9). However, a SPR of 1985 entrants studying a science, arts or economics course can be calculated from data given by Power et al. (1987, p. 40) for comparison with the 1990 sample SPR.

The calculated SPR for those commencing in a science, arts or economics course at the University of Adelaide in 1985 from Power et al. (1987, p. 40) was 0.79 compared with the equivalent figure calculated for the 1990 sample of 0.78. This comparison indicates that for commencing students in science, arts or economics courses, the overall progression rate is virtually the same as five years previously.

For the overall sample, the GPA (Grade Point Average) was 57.3 indicating an overall 'pass' standard (see section 3.2.2 for GPA ranges and equivalent standards). The breakdown of the GPA into particular standard levels is given in table 5.5 (subjects resulting in withdrawal without fail were ignored in the construction of the GPA). Only 4.6 % of students achieved an overall distinction standard, while 26.4 %

Table 5.5: Overall Grade Point Average (GPA).

Grade Point Average	N	%
75 to 100 (Distinction)	25	4.6
65 to 74 (Credit)	145	26.4
50 to 64 (Pass)	268	48.8
0 to 49 (Fail)	104	18.9
None*	7	1.3
Total	549	100.0

* Indicates all subjects resulted in incomplete fail or withdrawn with fail.

of students achieved an overall credit standard. The majority of students, 48.8 %, achieved a pass standard while 20.2 % of students had an overall fail standard.

Thus the percentage of students achieving an overall non-fail standard for all subjects in which they were still enrolled beyond the date for withdrawal without fail was 79.8 %.

5.2 Cross-analysis of 1990 Academic Achievement Data and Questionnaire Data

5.2.1 Gender and Academic Achievement

In agreement with previous research findings regarding gender and academic achievement (see section 2.4.3), the 1990 sample data indicated that females generally had a higher level of academic achievement than males. This higher achievement level manifested itself in higher progression rates and higher grade point averages.

Of males, 54.7 % passed all of their initial course load compared with 58.6 % of females, although this difference was not statistically significant. Females also achieved a higher SPR and GPA, the latter difference being statistically significant (see table 5.6). The SPR for females was 0.80 indicating that, on average, 80 % of

Table 5.6: Student sex by 100 % of course passed, GPA and SPR.

	Sex	
	Male	Female
N	150	171
% passing 100 %	54.7	58.6
N	261	282
Mean GPA[1]	55.4	58.9
N	274	292
Mean SPR	0.74	0.80
Mean % Withdraw no fail	10.0	9.2

[1] t-test is significant, $p<0.05$ (2-tail).

course load was passed by females compared with about 75 % for males. Females also had a significantly higher GPA of 59 compared with 55 for males.

It is interesting to note that a more detailed investigation of academic results revealed that, despite females having a higher GPA than males, males in fact had about the same proportion of distinctions as females, 9.3 % compared with 9.0 % respectively. The higher proportion of credits achieved by females compared with males, 26.3 % and 21.0 % respectively, accounted for the higher GPA for females. Males and females both had about the same proportions of withdrawals without fail.

A number of full first year subjects, that is, of six points value, were selected and

mean marks between males and females compared.[1] The seven subjects chosen were the main first year subjects of English, History, Anthropology, Chemistry, Mathematics, Psychology and Economics. Although females performed better in all of these subjects except Economics (where males performed slightly better), only Psychology had a significantly different mean score between males and females, 47.6 and 63.2 respectively ($p<0.01$ for 2-tail t-test).

5.2.2 Age and Academic Achievement

The data in table 5.7 which give the percentage of students who passed 100 % of their course load and the mean SPR and GPA for each age category, revealed that students fell neatly into three categories. Those aged less than eighteen years had

Table 5.7: Student age by 100 % of course passed, GPA and SPR.

	Student Age as at 1st January 1990.							
	> 22	22	21	20	19	18	17	< 17
N	38	2	4	6	16	49	179	29
% passing 100 %	58.5	66.7	40.0	42.9	39.0	46.2	63.3	61.7
N	58	3	10	14	38	101	276	46
Mean GPA	61.2	59.1	54.9	47.4	51.9	54.7	58.7	57.2
N	65	3	10	14	41	106	283	47
Mean SPR	0.75	0.78	0.71	0.59	0.67	0.71	0.82	0.78

roughly the same level of academic achievement as those aged more than twenty one years, and both of these age groups performed substantially better than those aged eighteen to twenty one years of age inclusive. The distinct performance categories for age revealed in table 5.7 were further analysed in relation to the compressed age categories in table 5.8. Those aged less than 18 had the highest proportion of 100 % pass rates at 63 % followed by those aged more than 21 years at 59 %. Those falling between these two age groups were by far the worst performers with only 44 % in this group achieving a 100 % pass rate. A χ^2-test of whether or not 100 % of the course was passed by these three categories of age was significant ($p<0.001$).

However, when the GPA was considered (this measure excluding subjects which

[1]The mean score for individual subjects was calculated in the same manner as for the GPA, namely, withdrawals with fail and incomplete fails were regarded as 0, and withdrawals without fail were ignored.

were recorded as withdraw not fail), it was found that those aged over 21 performed the best with a GPA of 61.2, followed by those aged under 18 with a GPA of 58.5.

Table 5.8: Student age by 100 % of course passed, GPA and SPR.

	Student Age as at 1^{st} January 1990.			
	> 21	18-21	< 18	Whole sample
N	40	75	208	323
% passing 100 %[1]	58.8	43.9	63.0	56.8
N	61	163	322	546
Mean GPA[2]	61.1	53.5	58.5	57.3
N	68	171	330	569
Mean SPR[3]	0.75	0.69	0.81	0.77
Mean % Distinction	12.6	7.4	9.4	9.2
Mean % Credit[4]	30.8	19.8	24.6	23.9
Mean % Pass	31.8	41.8	47.3	43.8
Mean % Fail[4]	6.9	13.5	9.6	10.4
Mean % Withdraw not fail[5]	17.2	11.8	6.8	9.6

[1] χ^2-test is significant, p<0.001.

[2] 18-21 group significantly different to both <18 and >21 group at 0.01 level for Scheffe's test.

[3] 18-21 group significantly different to <18 group at 0.01 level for Scheffe's test.

[4] 18-21 group significantly different to >21 group at 0.1 level for Scheffe's test.

[5] 18-21 group significantly different to both <18 and >21 group at 0.1 level for Scheffe's test.

Again, the worst performers were those aged 18–21 with a GPA of only 53.5, this score being significantly different to both the other age groups' scores (Scheffe's test at the 0.01 level). A breakup of mean proportion of distinctions, credits, passes and failures achieved by age group (see table 5.8) showed that the older than 21 age group achieved greater proportions of both distinctions and credits whilst also having a lower proportion of fails than both the 18-21 and under 18 groups. Similarly, the under 18 group had greater proportions of both distinctions and credits than the 18-21 group whilst also having a lower proportion of fails.

For the SPR, those under 18 were found to have the largest overall progression ratio with a mean 81 % of course load being passed. This group was followed by the over 21 and 18-21 groups with SPRs of 0.75 and 0.69 respectively. The under 18 and 18-21 age group SPRs were significantly different (Scheffe's test at the 0.01 level).

Although the over 21 age group had the highest GPA, it had only the second largest SPR, this being due to this group having, by far, the largest mean proportion of withdrawals without fail at 17 %. The 18–21 age group also had a higher proportion of withdrawals without fail than the under 18 group, 12 % compared with 7 % (Scheffe's test was significant at the 0.1 level).

Correlation coefficients of age with SPRs and GPAs were also calculated for various age groupings. For those aged more than 17, $r^{SPR} = 0.0653$ and $r^{GPA} = 0.1315$, the latter being significant ($p<0.05$). This indicates that, for those more than 17 years of age, the older the student, the greater the GPA and the greater the proportion of course load passed. For those aged less than 22 years, $r^{SPR} = -0.1511$ and $r^{GPA} = -0.1315$ ($p<0.01$ for both), indicating that the older the student, the lower the GPA and the lower the proportion of course load passed.

The same seven subjects used in the analysis of gender and academic achievement were also used in the analysis of student age and academic achievement (see table 5.9). Although numbers in particular cases were small, overall tendencies can be identified along with the main exceptions. For each subject, the mean mark of the less than 18 age group was higher than for the 18-21 age group. However, for almost every subject the over 21 group had a mean mark higher than for both the 18-21 and the less than 18 year age groups. Further inspection revealed that the mean scores of the over 21 age group were substantially higher than the other age groups for the Faculty of Arts subjects, namely, English, History, Anthropology and Psychology. However, this trend did not carry over to the science or economics subjects. The over 21 group performed only marginally better than the other two age groups in Chemistry, whilst for Economics they performed considerably worse than the under 18 group, and in the case of Mathematics, was the worst performing age group.

Correlation coefficients of age by subject marks further reinforced the older students' better performance in arts subjects but their similar or weaker performance in science and economics subjects (see table 5.9). For first year History there was a strong positive and significant correlation of age with performance ($r=0.3139$, $p<0.05$) whilst for Economics there was a strong negative and significant correlation of age with performance ($r=-0.2737$, $p<0.01$).

The above research findings supported those of previous research on age and aca-

Table 5.9: Student age by mean individual subject marks.

N Mean score	Student Age as at 1st January 1990.				Correlation coefficients
	> 21	18-21	< 18	Whole sample	
English	26 64.5	45 51.9	91 55.7	162 56.1	0.1235
History	4 74.8	14 65.9	39 67.8	57 67.8	0.3139*
Anthropology	3 74.0	13 46.4	21 55.9	37 54.0	0.2461
Chemistry	11 60.9	62 53.9	174 57.1	247 56.5	0.0518
Mathematics	2 44.5	21 48.0	70 54.3	93 52.7	0.0001
Psychology	3 77.7	25 50.0	84 60.5	112 58.6	0.1062
Economics	18 54.5	37 54.2	45 62.7	100 58.1	-0.2737**

* $p<0.05$.

** $p<0.01$.

demic achievement (see section 2.4.3), namely, that for direct school leaver entrants, the younger students performed better than the older students. Previous findings that mature age students perform just as well, if not better, than the student population as a whole and that within the mature age group, there is a correlation of the older the student, the better the performance, were also strongly supported by the above research findings.

5.2.3 Students' Semester Residence and Academic Achievement

In comparing the two groups of students, those who lived at home with their parents and those who did not, no large or significant differences were found for any of the academic achievement indicators (see table 5.10). Although Power et al. (1987) found for 1985 entrants in some South Australian Higher Education Institutions that those who were not living at home with parents performed significantly better than those who were, this was not the case for students at the University of Adelaide. Nor did Power find that overall pass rates differed greatly between those living at home

Table 5.10: Students' semester residence by 100 % course passed, GPA and SPR.

	100 % of course passed[1]	GPA[2]	SPR[2]
All categories other than 'Home with parents/relations'	109 58.3	178 58.2	187 0.78
Home with parents/relations	210 56.3	360 56.9	373 0.77
College or hall of residence	28 66.7	41 61.3	42 0.86
Sharing house or flat with friends	30 50.0	58 53.5	60 0.70
Flat or house with partner/ alone/with own children	34 66.7	46 63.1	51 0.81
Boarding	12 48.0	25 56.0	25 0.80
Other	5 55.6	8 55.8	9 0.66

[1] Cell values are the number of cases and the percentage of each residential category achieving a 100 % pass.

[2] Cell values are the number of cases and the mean score for each residential category.

and those doing otherwise (see section 2.4.3). Thus the current research findings were much the same as Power's of five years ago. A breakup of the 'away from home' category into its component parts revealed some interesting results. For the categories of 'college or hall of residence' or 'flat or house with partner/alone/with own children', all academic achievement indicators were notably better than for those living at home with parents or relations. However, those sharing a house or flat with friends were generally the worst performers of all.

For each of the seven first year subjects investigated (English, History, Anthropology, Chemistry, Mathematics, Psychology and Economics), no significant differences in mean scores were found between those students living at home with parents/relations and those living away from home.

5.2.4 Students' Financial Support and Academic Achievement

For the investigation of students' financial support and academic achievement, the various financial source categories were recoded as being either a major source, or, a non-existent or minor source. For a number of financial source types, a significant difference was found between students who regarded each as a major source and those who did not for a number of academic achievement indicators (table 5.11).

In general, those who relied on AUSTUDY/ABSTUDY or part-time work as a major financial source performed significantly worse than those for whom these were not major sources. On the other hand, those for whom parents/guardians or spouses were a major financial source, performed significantly better than those for whom these sources were not major.

Of those who considered AUSTUDY to be a major source, only 52 % passed 100 % of their course load compared with 60 % of those for whom AUSTUDY was not a major source. This latter group also had a significantly higher GPA and SPR. An interesting finding was that the withdrawal without fail mean percentages were about the same but the mean proportion of actual fails was significantly higher for those with AUSTUDY as a major source than for those for whom it was not, 15 % and 9 % respectively (for t-test, $p<0.01$). An explanation for this would be that students stayed enrolled in and failed subjects in order to remain eligible for full AUSTUDY assistance throughout the year, rather than withdraw from subjects and no longer be eligible to receive the full AUSTUDY allowance.

The largest and most significant differences in academic achievement were found in relation to whether or not casual or part-time work was a major income source. Of those for whom it was, only 42 % passed 100 % of their total course load compared with 64 % of those who did not rely on part-time work as a major income source. The GPA and SPR were both significantly lower for those relying heavily on part-time work (see table 5.11). The difference in the SPRs was particularly large, with those depending on part-time work as a major income source having an SPR of only 0.68 compared with 0.81 for those who did not depend on part-time work as a major source. By far, the main factor contributing to this situation was the much larger mean proportion of withdrawals without fail in the group with part-time work as a major financial source than for those not relying on part-time work, the mean respec-

Table 5.11: Students' financial support by 100 % of course passed, GPA and SPR.

	Degree of support[4]	100 % of course passed[1]	GPA[2]	SPR[2]	Mean % WNF[3]
AUSTUDY/ABSTUDY	Major	69	128	134	134
		51.5	54.7[7]	0.73[7]	9.0
	Minor	239	384	399	399
		59.9	58.4	0.79	9.3
Regular full-time work	Major	20	27	30	30
		66.7	56.1	0.74	16.7
	Minor	281	472	489	489
		57.5	57.7	0.78	8.6
Casual or part-time work	Major	64	144	152	152
		42.1[6]	54.2[8]	0.68[8]	14.9[8]
	Minor	233	351	365	365
		63.8	58.8	0.81	7.5
Parents/guardians	Major	183	285	294	294
		62.2[5]	58.9[7]	0.82[8]	7.8
	Minor	125	222	234	234
		53.4	56.1	0.73	11.1
Spouse/partner	Major	15	21	22	22
		68.2	67.1[8]	0.88	8.5
	Minor	289	483	502	502
		57.6	57.2	0.78	9.0

[1] Cell values are the number of cases and the percentage of each category achieving a 100 % pass.

[2] Cell values are the number of cases and the mean score for each category.

[3] Cell values are the number of cases and the mean percentage of withdrawals without fail for each category.

[4] Major: This source is a major financial source.
Minor: This source is only a minor or non-existent financial source.

[5] For χ^2-test, $p<0.05$.

[6] For χ^2-test, $p<0.001$.

[7] For t-test, $p<0.05$ (2-tail).

[8] For t-test, $p<0.01$ (2-tail).

tive proportions of withdrawals without fail being 15 % and 8 % (for t-test, $p<0.01$). The lower performance of those engaged in part-time work could be explained by these students finding their work load combined with their study load too much to cope with but as they required the income from their work, it was the study time that was reduced by withdrawing from part, or all, of their course load. Another factor, which could contribute to the lower GPA for part-time workers was that these students had to divide their concentration and train of thought between their work and study environments, whereas those not working were more able to stay in the one train of thought – their study.

Mixed results were found for those who had regular full-time work as a major income source. Although a greater percentage of those who were engaged in full-time work passed 100 % of their course load compared with those who were not, 67 % and 58 % respectively, those with full-time work had a lower GPA and SPR. None of these differences were statistically significant though. The main factor contributing to the lower SPR for those engaged in full-time work was the higher mean proportion of withdrawals without fail rate for this group.

All indicators pointed to the conclusion that those who relied on their parents or guardians as their main financial support had the superior academic achievement. Of those who relied on their parents, 62 % passed 100 % of their course load compared with 53 % of those who did not. Those who relied on parents also had a significantly higher GPA and SPR. Students who relied on parents as a major income source passed 82 % of their initial course load compared with only 73 % of those who did not. The higher failure and equally higher withdrawal rates that occurred for those who did not rely heavily on parents accounted for this difference.

Similarly, all indicators pointed to the conclusion that those who relied on a spouse or partner as their major source of financial support had a higher level of academic achievement than those who did not. Of those who relied on a spouse or partner, 68 % passed 100 % of their course load compared with 58 % of those who did not. Those who relied on a spouse or partner also had a substantially higher GPA, 67.1, and a higher SPR, 0.88, compared with 57.2 and 0.78 respectively for those who did not rely on a spouse or partner. The main factor contributing towards the higher SPR for those who relied on a partner was the significantly lower mean fail rate rate of 2.5 % compared with 10.6 % for those who did not rely on a partner ($p<0.01$). The

mean withdrawal without fail rates for the two groups were much the same.

The above findings on type of financial support and academic achievement reinforce the earlier findings of Power et al. (1987) for 1985 entrants to South Australian higher education (see section 2.4.3). He found that, among school leavers, those who relied on parental support performed better than those who relied on TEAS (the 1985 equivalent of AUSTUDY) or part-time work. For non-school leavers, he found that those dependent on a spouse or partner performed significantly better than those dependent on other forms of financial support.

5.2.5 Dependent Children and Academic Achievement

Of those students who claimed to have at least one dependent child, 60 % (18) passed 100 % of their course load compared with 57 % of those who did not have any dependent children, the difference being small and insignificant. Those with dependents had a higher GPA than those without, 61.7 compared with 57.0, but had a SPR much the same as those without dependents due to a higher mean withdrawal without fail rate of 16 % compared with 9 % for those without dependents.

5.2.6 Number of Siblings and Academic Achievement

Question 17 of the questionnaire asked students to give the number of siblings they had and their order of birth. With students grouped as having less than two siblings or two or more siblings, no large or significant differences were found in relation to any of the academic achievement indicators. The same applied when students were grouped as having less than three siblings or three or more siblings. Further, no strong or significant correlations of the number of siblings or birth order with any of the academic achievement indicators were found.

5.2.7 Socio-economic Status and Academic Achievement

In investigating the cross-classified characteristics of the questionnaire data, parental education and occupation levels were the main socio-economic status indicators used. These indicators were used to establish whether or not any differences in academic achievement could be related to socio-economic status. For the purpose of conducting

χ^2-tests and t-tests, parental education and occupation levels were regrouped. For education levels, the data was regrouped into those with a parent holding a Bachelors Degree or higher qualification, or those with a parent with an education level lower than a Bachelors Degree. These two groups were generally referred to as the 'high' and 'low' education groups.

Similarly, parental occupation levels were also regrouped into those with a parent in the professional/technical or administrative/managerial/executive occupation categories, or, all those not in these categories[2] (see table C.6 for occupation categories). These two groups constituted the 'high' and 'low' occupation groups respectively.

Parental Education Level and Students' Academic Achievement

In relating fathers' education levels with students' academic achievement, all the indicators revealed that those with a father holding a degree or higher qualification performed significantly better than those with a father in the low education group. Of those with a father in the high education group, 65 % passed 100 % of their course load compared with only 54 % of those with a father in the low educational category (see table 5.12). Those with a father in the high category also had a significantly higher GPA and SPR, 59.5 and 0.83 compared with 56.6 and 0.75 respectively for those with a father in the low education category. These differences came about through higher proportions of distinctions and credits and lower proportions of fails and withdrawals for those with a father in the high education group. The most significant factor was the mean proportion of withdrawals without fail which was 11 % for those with a father in the low education category, compared with only 5 % for those with a father holding a degree or higher qualification.

With the eight original education level categories (see table C.7) considered as a continuous scale, correlation coefficients were calculated for fathers' education level with students' GPA, SPR and withdrawal without fail rate. All correlations were significant and indicated that the higher the education level of the father, the higher the GPA and SPR and the lower the withdrawal without fail rate (r^{GPA} =0.0889, $p<0.05$; r^{SPR} =0.1189, $p<0.01$; r^{WNF} =-0.1283, $p<0.01$).

However, the same trend did not apply in relation to mothers' education levels. Although a greater proportion of those with a mother in the high education category

[2]Excluding the responses retired, unemployed and deceased.

Table 5.12: Parental education level by 100 % of course passed, GPA and SPR.

	Fathers' Ed^n Level[1]		Mothers' Ed^n Level[1]	
	High	Low	High	Low
N	119	192	88	227
% passing 100 %[1]	65.0[2]	53.9	63.8	55.2
N	181	339	134	395
Mean GPA	59.5[4]	56.6	57.5	57.5
N	183	356	138	411
Mean SPR	0.83[3]	0.75	0.79	0.77
Mean % Distinction	12.8[3]	7.9	9.5	9.4
Mean % Credit	28.4[3]	22.5	25.3	24.1
Mean % Pass	41.8	44.7	44.5	43.5
Mean % Fail	9.2	11.2	7.4	11.4
Mean % Withdraw no fail	4.8[3]	10.5	8.6	9.0

[1] High: Degree or higher qualification. Low: Less than Degree.
[2] χ^2-test significant between high and low groups, $p<0.05$.
[3] For t-test, $p<0.01$ (1-tail).
[4] For t-test, $p<0.05$ (1-tail).

passed 100 % of their course load, 64 % compared with 55 % of those with a mother in the low education category, this difference was not significant. For mothers, there were only negligible differences between the high and low education categories in relation to the other academic achievement indicators, nor were there any significant correlations between mothers' education levels and students' academic achievement.

Thus, as with the investigation of interrelated questionnaire data, significant differences were more likely to be found in relation to fathers' rather than mothers' educational background. Although the above findings gave strong evidence that the higher the father's education level, the higher the academic achievement of the student, previous research has not always found this to be the case (see section 2.4.2). Although Power et al. (1986) found that withdrawal rates were lower for those with a father with a higher education for 1985 entrants to higher education in South Australia (as was found for the 1990 survey above), his results showed that overall, parental education levels had no significant bearing on students' grade point averages (Power et al. (1987)). However, when individual institutions in Power's study were considered, in the case of the University of Adelaide, a significant positive correlation

of father's education level with student's GPA (GPA as calculated by Power) was found ($r=0.13$, $p<0.05$ (1 tail)), while a small insignificant positive correlation was found for mother's education level with student's GPA. These results were supported by the findings of the 1990 study discussed above.

Previous research which differs from the above findings was conducted by Otto (1975) (see section 2.4.2). He found that for 1970 matriculant entrants to the faculties of Arts and Science at the University of Adelaide, higher examination marks were obtained by students whose fathers had no post-secondary education.

Parental Occupation Level and Academic Achievement

For the investigation of parental occupation levels and student academic achievement, no large or significant differences were found in any of the academic achievement indicators between those with a mother, or a father, in the high occupation category and those with a parent in the low occupation category. Nor were there any significant differences in individual subject marks for the seven subjects investigated.

The most notable differences were found between those who claimed that their mother was 'home-based' and those who specified another occupation for their mother. Although there were no significant differences between these two groups in any of the major academic achievement indicators, the results suggested that those with home-based mothers performed better than those whose mothers worked outside the home. Of those with home-based mothers, 61 % passed 100 % of their course compared with 56 % of the other group. The home-based group also had a larger GPA and SPR of 59.1 and 0.79 respectively compared with 57.3 and 0.77 for the non-home-based group. These differences were not significantly different, however.

In addition, those with home-based mothers performed better in every one of the seven subjects investigated except Economics. Only one subject had a significant difference in marks, namely English, where those with home-based mothers had a mean mark of 64.3 compared with 53.9 for those with mothers employed outside the home ($p<0.01$ for t-test (2-tail)).

The previous research of Power et al. (1986 & 1987) had found that for South Australian higher education as a whole, there was no consistent relationship between parents' occupation levels and students' academic achievement, a conclusion also reached by other researchers (see section 2.4.2). However, Power did find that for

1985 entrants to the University of Adelaide specifically, the withdrawal rates for those with a mother or father in the semi or high professional categories were notably lower than for those with a mother or father in a lower occupation category, this not being the case for the 1990 survey findings.

5.2.8 Students' Educational Background and Academic Achievement

Although no significant differences were found in the various academic achievement indicators related to the type of secondary school system attended, some consistent trends and notable differences were found. Those who last attended a state secondary school had the greatest proportion passing 100 % of their course load, 61 %, compared with 54 % of those who last attended an independent school, and 53 % of those who last attended a Catholic school (see table 5.13). Those from T.A.F.E. had the lowest proportion, 45 %, passing 100 % of their course whilst 59 % of those from an overseas school or college passed 100 % of their course. However, the sample sizes of the

Table 5.13: Last type of secondary school attended by 100 % of course passed, GPA and SPR.

	Last type of Secondary School Attended				
	State	Catholic	Other Indep.	T.A.F.E.	Overseas schooling
N	175	44	82	14	10
% passing 100 %	61.4	53.0	54.3	45.2	58.8
N	271	79	148	30	17
Mean GPA	58.2	53.7	57.4	59.8	55.9
N	285	83	151	31	17
Mean SPR	0.79	0.72	0.77	0.76	0.84
Mean % Distinction	8.6	7.7	10.9	11.8	8.0
Mean % Credit	24.9	21.0	25.6	17.8	25.8
Mean % Pass	45.2	43.0	40.3	34.3	49.8
Mean % Fail	9.7	13.2	9.9	9.3	9.8
Mean % Withdraw no fail	9.1	9.8	9.7	14.5	2.0

T.A.F.E. and overseas groups were too small to arrive at any meaningful conclusions.

Apart from the small group of students from T.A.F.E., state school students also had the largest GPA of 58.2 compared with 57.4 for those from an independent school

and the lowest GPA of 53.7 for those who last attended a Catholic school. A similar pattern for the SPR also occurred for the main school systems. Those from a state school had an SPR of 0.79 closely followed by those from an independent school with 0.77 whilst those from a Catholic school had the lowest SPR of 0.72. The highest SPR of 0.84 was for the small sample of students from an overseas school or college.

Mean withdrawal without fail rates were much the same for the three main school systems at around 10 %. The largest mean withdrawal without fail rate of 15 % was for the small sample of T.A.F.E. students whilst those from an overseas school or college had the lowest mean withdrawal without fail rate of all at 2 %.

Thus for the three main school systems, the academic achievement indicators pointed to those from the state school system as having the highest overall achievement closely followed by those from the independent school system. Those from the Catholic school system were found to perform consistently worse than those from either the state or independent school systems.

The above research findings do not however coincide with those of Power et al. (1986 & 1987) who found no significant or consistent trend between school system attended and grade point average or overall pass rates for 1985 entrants to South Australian higher education (see section 2.4.2). Further, no large or significant correlations of school system attended and grade point average were found specifically in relation to 1985 entrants to the University of Adelaide. Nevertheless, there are a number of other studies that do support the finding that those from Catholic schools do not perform as well as those from either state or independent school systems (see section 2.4.2).

5.2.9 Various University Course Factors and Academic Achievement

Course Preference and Academic Achievement

In the investigation of academic achievement and whether or not students were enrolled in their first preference course as indicated on their SATAC application, substantial and significant differences were found (table 5.14). Of those who were enrolled in their first preference course, 61 % passed 100 % of their course load compared with only 47 % of those who were not enrolled in their first preference course (for χ^2-test,

Table 5.14: Whether or not student was enrolled in first preference course by 100 % of course passed, GPA and SPR.

	Enrolled in first preference course.	Not enrolled in first preference course.
N	245	77
% passing 100 %[1]	61.3	47.0
N	383	159
Mean GPA[2]	58.4	54.7
N	400	164
Mean SPR	0.79	0.74
Mean % Fail[2]	8.5	14.5
Mean % Withdraw no fail	9.5	9.2

[1] χ^2-test is significant, $p<0.01$.

[2] t-test is significant, $p<0.01$ (2-tail).

$p<0.01$). Those enrolled in their first preference course also had a higher GPA and SPR of 58.4 and 0.79 respectively compared with 54.7 and 0.74 for those not enrolled in their first preference course (for t-test on GPA means, $p<0.01$). Although the mean withdrawal without fail rates of the two groups were virtually the same, the actual fail rates were significantly different with those enrolled in their first preference course having a mean proportion of fails of 8.5 % compared with 14.5 % for those not enrolled in their first preference course.

Entry Qualification and Academic Achievement

The University of Adelaide admits students in a number of ways. Table 5.15 below gives the academic achievement information related to the various entry paths taken by students. Although the numbers were quite small for entry qualifications other than Australian matriculation, indications were that those who gained admission via the Special Entry Scheme performed at the same level as those who gained entry through the usual matriculation avenue. The data also suggested that those who gained entry via Adult matriculation performed slightly better than others in subjects completed but due to a high mean proportion of withdrawals of 19 %, had a notably lower proportion passing 100 % of course load than others (47 %) and a lower SPR of 0.73.

Table 5.15: Entry qualification by 100 % of course passed, GPA and SPR.

	Australian matriculation	Adult matriculation	Special Entry	Other
N	286	7	19	11
% passing 100 %	57.0	46.7	57.6	68.8
N	485	14	30	15
Mean GPA	57.1	58.7	58.1	62.4
N	502	15	33	16
Mean SPR	0.77	0.73	0.74	0.79
Mean % Fail	10.7	5.3	10.5	1.3
Mean % Withdraw no fail	8.7	18.5	13.7	15.2

Course Load and Academic Achievement

Substantial and significant differences were found in relation to course load and academic achievement. In the investigation of course load and academic achievement, students were divided into three groups, namely, those who initially enrolled in less than 24 subject points in 1990 (part-time students), those who enrolled in 24 points (full-time students), and those who enrolled in more than 24 points (over-load students). Full-time students had the largest proportion passing 100 % of their course load, 66 %, compared with the significantly lower proportions of 44 % and 41 % for the part-time and over-load students respectively (table 5.16). The part-time group also had a much lower SPR of 0.60 than either the full or over-time groups with SPRs of 0.83 and 0.78 respectively. The factor contributing by far the most to the lower SPR for the part-time group was the considerably larger mean proportion of withdrawals without fail of 27 % compared with only 4 % and 9 % for the full and over-load groups respectively. Even when only those subjects from which students did not withdraw without fail from were considered, the significantly lower GPA of the part-time group, 53, compared with 59 and 58 for the full and over-load groups respectively, still revealed the part-timers to be the worst performers.

In looking specifically at the over-load students, the data revealed that their GPA was much the same as for the full-time students but their SPR lower due almost entirely to a higher mean withdrawal without fail rate. A partial explanation for these results may be that some students enrol in an overload so as to experience a wider range of subjects but with the intention of withdrawing from those subjects

Table 5.16: Course load by 100 % of course passed, GPA and SPR.

	Number of points initially enrolled in 1990[1].			
	< 24	24	> 24	All
N	51	232	43	326
% passing 100 %[2]	44.0	66.1	41.3	57.1
N	100	345	103	548
Mean GPA[3]	52.8	58.6	57.7	57.4
N	116	351	104	571
Mean SPR[4]	0.60	0.83	0.78	0.77
Mean % Distinction	6.1	10.0	9.9	9.2
Mean % Credit	22.5	24.2	25.2	24.1
Mean % Pass[5]	31.1	48.5	42.5	43.9
Mean % Fail	8.6	10.6	10.5	10.2
Mean % Withdraw no fail[4]	26.6	4.1	8.8	9.5

[1] 24 points constitutes a full years load.

[2] χ^2-test is significant, p<0.001

[3] <24 group significantly different to both 24 point and >24 groups at 0.01 and 0.1 levels respectively for Scheffe's test.

[4] <24 group significantly different to both 24 point and >24 groups at 0.01 level for Scheffe's test.

[5] <24 group significantly different to both 24 point and >24 groups at 0.01 and 0.05 levels respectively for Scheffe's test.

that interest them least, or in which they are performing worst of all.

Much research into the academic achievement of part-time versus full-time students supports the above finding that part-time students have a considerably higher propensity to withdraw than full-time students (see section 2.4.3.). Previous research has also found that, when withdrawals were discounted, part-time students had a similar or *lower* proportion of fails than full-time students (Butterfield and Kane (1969), Power et al. (1986)). This was the finding of the 1990 study as well.

Course Choice Factors and Academic Achievement

In the investigation of differences in academic achievement related to factors which students claimed were influential in choosing their course, a number of significant or notable differences were found (table 5.17) (see table C.14 for a complete list of course choice factors). The largest and most significant differences in academic

Table 5.17: Influential course choice factors by 100 % of course passed, GPA and SPR.

	Importance of factor	100 % of course passed[1]	GPA[2]	SPR[2]
Matric score needed for entry	Important[3]	158	297	306
		51.6[5]	55.4[7]	0.76
	Not Imp.[4]	161	239	252
		63.9	59.9	0.79
Unable to get in elsewhere	Important	24	44	45
		53.3	52.0[8]	0.73
	Not Imp.	289	486	507
		57.0	57.8	0.77
Own aspirations and interests	Important	316	521	542
		58.3[5]	57.9[8]	0.78[7]
	Not Imp.	3	15	16
		18.8	39.5	0.45
Personal challenge offered	Important	270	442	460
		58.7	58.2[8]	0.79[8]
	Not Imp.	47	90	94
		50.0	53.4	0.70
To avoid written English	Important	14	35	35
		40.0[6]	50.9	0.70
	Not Imp.	301	495	517
		58.2	57.8	0.78
Prestige or status involved	Important	93	150	155
		60.0	59.1	0.81
	Not Imp.	223	384	401
		55.6	56.5	0.75
Content of course	Important	274	456	475
		57.7	58.1[8]	0.78
	Not Imp.	44	81	84
		52.4	52.6	0.70
Unsure as to what else to do	Important	54	102	107
		50.5	55.5	0.72
	Not Imp.	261	430	447
		58.4	57.9	0.78

[1] Cell values are the number of cases and the percentage of each category achieving a 100 % pass.
[2] Cell values are the number of cases and the mean score for each category.
[3] Course choice factor was considered as important.
[4] Course choice factor was considered as not important.
[5] For χ^2-test, $p<0.01$.
[6] For χ^2-test, $p<0.05$.
[7] For t-test, $p<0.01$ (2-tail).
[8] For t-test, $p<0.05$ (2-tail).

achievement occurred with regard to the 'Own aspirations and interests', 'Personal challenge offered', 'To avoid written English' and 'Content of course' factors. Those who did not consider their own aspirations or interests, the personal challenge offered, or the content of the course as important in choosing their course, performed worse in all the academic achievement indicators (and significantly worse in at least one instance) than those who considered these factors important. Those who considered it important to choose their course in order to avoid written English performed much worse than those who considered this factor as not important. The largest difference in mean withdrawal without fail rates occurred for the 'Own aspirations and interests' factor; those who considered this factor not important had a mean proportion of withdrawals without fail of 22 % compared with only 9 % for those who considered this factor important.

The results also indicated that those who considered the factors 'Matric score needed for entry', 'Unable to get in elsewhere' and 'Unsure as to what else to do' as not important in influencing their choice of course, performed better than those who did consider these factors as important. Those who indicated that the prestige or status involved in a course was important in influencing their choice of course performed better than those not considering this factor as important.

There were a number of course choice factors for which no notable or significant differences in academic achievement occurred between those considering them important and those regarding them as not important. These were parents', teachers' or friends' attitudes or influence, the financial rewards at the end of the course, the cost and ease of transport, and whether or not the course would better enable the student to serve society.

Higher Education Aspirations and Academic Achievement

No significant or consistent differences were found in relation to students' higher education aspirations and their 1990 academic achievement.

5.2.10 Language Background of Students and Academic Achievement

Languages Used with Family and Friends and Academic Achievement

For the investigation of language usage with family and friends and academic achievement, students were grouped into those who spoke English only with their family or friends and those who spoke a language other than English with family or friends at least some of the time. In both the cases of language spoken with family and language spoken with friends, the results indicated that overall, those who spoke English only performed only very slightly better than those who used a language other than English. No significant differences were found in any of the academic achievement indicators between those who spoke English only and those who spoke a language other than English with family or friends.

The above findings do not agree with those of previous research into language spoken at home and academic performance. Power et al. (1987) found that in general, of the 1985 entrants to higher education in South Australia, those who spoke English only at home had significantly higher grade point averages than those speaking a language other than English either exclusively, or in addition to English at home (see section 2.4.1). Further, Holton and Salagaras (1988) stated that at La Trobe University, those from English speaking backgrounds had significantly higher rates of A and B grades than non-English speaking background students whilst also having a lower failure rate. However, when Power's data specifically relating to 1985 entrants to the University of Adelaide were considered, the correlation of language usage and grade point average was insignificant and the weakest of all the South Australian higher education institutions (r=-0.03).

Languages Studied at Secondary School and University

Table 5.18 gives the values of the main academic achievement indicators for those who studied a non-English language at secondary school, or at the University of Adelaide in 1990 and those who did not. Although no significant differences in academic achievement were found between those who had studied at least one language other than English during the course of their secondary schooling and those who had not, the results indicated that those who did performed better than those who did not.

Table 5.18: Language at secondary school and university by 100 % of course passed, GPA and SPR.

	Secondary school language study	
	No non-English language studied	At least one non-English language studied
N	49	277
% passing 100 %	53.8	57.6
N	86	463
Mean GPA	56.7	57.4
N	91	481
Mean SPR	0.75	0.77
	University language study	
N	299	27
% passing 100 %	58.2	46.6
N	492	57
Mean GPA	57.1	59.4
N	514	58
Mean SPR	0.77	0.77

The largest differences occurred with respect to the proportions passing 100 % of their course load, 58 % and 54 % respectively for those who had and those who had not studied a non-English language, and the SPRs of 0.77 and 0.75 respectively.

When considering language study at the University, however, the GPAs and SPRs of those who had and those who had not studied a language other than English in 1990 were virtually the same. However, the proportion of students who passed 100 % of their course load was notably lower for those who had studied a language other than English, 47 %, compared with those who had not, 58 %.

5.2.11 Ethnicity and Academic Achievement

Students' and Parents' Birthplaces and Academic Achievement

With the countries of birth grouped as 'Australia' or 'Other', no large or significant differences were found in relation to students' or students' parents' countries of birth and academic achievement. Similarly, no large or significant differences were found in relation to students' or students' parents' countries of birth when grouped as 'English speaking' or 'Non-English speaking'. Thus on the whole, when countries of birth are used as an indicator of whether or not a student is to be considered as coming from a

non-English speaking background, the results indicated that there were no significant or large differences in academic performance between those from English speaking backgrounds and those from non-English speaking backgrounds.

However, when the academic achievement data were broken down into more detailed country of birth categories, although numbers were small for some cases, some notable differences were found (see table 5.19). For the students' countries of birth, those in the 'Other English speaking', 'Asian' or 'Other non-English speaking' categories were in general the best performers whilst those born in a non-English speaking European country were by far the worst performers with only 50 % of this group passing 100 % of their course load and with a GPA and SPR of 53 and 0.62 respectively. The main factor contributing to the much lower SPR for this group was the large mean proportion of withdrawals without fail of 21 %, this being by far the largest rate of withdrawal of all the groups. Students born in Australia generally ranked second to last in academic achievement.

Students born in an English speaking country other than Australia generally performed the best. The proportion passing 100 % for this group was by far the highest at 74 %, the next highest being 56 % for those born in Australia or an Asian language speaking country.

Some of the trends found in relation to students' countries of birth carried over to the investigation of students' mothers' countries of birth and academic achievement. Here, those with a mother born in a non-English speaking European country were by far the worst performers whilst those with an Asian born mother stood out as the best overall performers. Those with an Australian born mother consistently ranked second best rather than second to worst as was found for students born in Australia. Those with a mother born in the 'Other English speaking' or 'Other non-English speaking' categories generally performed worse than those with a mother in the 'Asian' or 'Australian' categories but generally better than those with a mother in the 'non-English speaking European' category. Again, by far the largest mean withdrawal without fail rate, 17 %, went to the 'non-English speaking European' category.

When fathers' birthplaces were considered, however, the results were not as consistent as for students' or students' mothers'. Those with a father in the 'Other non-English speaking' category were consistently the best performers, although the

Table 5.19: Students' and parents' birthplaces by 100 % of course passed, GPA and SPR.

	Student's country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	259	31	7	20	7	324
% passing 100 %	55.8	73.8	50.0	55.6	53.8	56.9
N	443	42	12	36	13	546
Mean GPA	57.0	59.7	53.1	58.0	62.9	57.3
N	464	42	14	36	13	569
Mean SPR	0.76	0.86	0.62	0.81	0.85	0.77
Mean % WNF[1]	10.3	4.0	21.1	3.3	6.1	9.5
	Mother's country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	214	47	29	27	6	323
% passing 100 %	57.4	56.6	51.8	60.0	54.5	56.9
N	358	81	50	45	11	545
Mean GPA	57.6	56.4	54.9	59.0	56.5	57.3
N	373	83	56	45	11	568
Mean SPR	0.78	0.76	0.67	0.83	0.71	0.77
Mean % WNF[1]	9.4	8.5	16.9	3.2	12.3	9.6
	Father's country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	207	51	32	25	7	322
% passing 100 %	56.7	53.7	58.2	58.1	77.8	56.8
N	353	90	49	43	9	544
Mean GPA	57.2	56.5	56.8	58.2	65.7	57.3
N	365	95	55	43	9	567
Mean SPR	0.78	0.73	0.70	0.82	0.88	0.77
Mean % WNF[1]	9.2	10.6	14.6	5.2	2.8	9.6

[1] WNF: Withdrawal Without Failure.

[2] NES: Non-English Speaking.

numbers for this group were very small. The 'Other English speaking' category was generally the worst performing group, a complete turn around from when students' or students' mothers' countries of birth fell into this category. Those with an Asian born father were amongst the highest achievers whilst those with a father born in Australia or a non-English speaking European country were generally in between the worst and best performing groups.

Although the academic achievement of those associated with a particular country of birth varied depending on whether students', mothers' or fathers' countries of birth were considered, when all the data are considered, indications were that those originating from a non-English speaking European country were the worst performers whilst those originating from an Asian country or a country in the 'Other non-English speaking' category were generally amongst the best performers. Those with English speaking country origins (including Australia) ranked, overall, in between the best and worst performers.

The finding that students born in non-English speaking European countries had higher rates of withdrawal and failure is supported by the previous research of Gilson (1962) who found that non-English European born students had much higher failure rates compared with Australian born students (see section 2.4.1). With students' parents' countries of birth grouped as Australian or 'Other', Power et al. (1986) found that those with a parent born in Australia had slightly higher failure and withdrawal rates than others. Thus Power's results do not differ greatly from the 1990 survey findings that those with an Australian born parent performed at virtually the same level as those with a parent born elsewhere.

5.2.12 Social Integration and Academic Achievement

In the questionnaire, students were asked to think of their three closest friends and to give what number of these were of British or Anglo-Celtic background, their own cultural background (if other than British/Anglo-Celtic), or a minority cultural background other than their own (question 23 of questionnaire). In the investigation of social integration and academic achievement, students were divided into two groups, namely, those who identified with an Anglo-Celtic ancestral background (in question 22 of the questionnaire), and those who identified with a specific ancestral background other than Anglo-Celtic.

For the Anglo-Celtic identifying group, no large or significant differences were found in the academic achievement indicators between those students who claimed to have all three of their closest friends of Anglo-Celtic background and those who claimed to have at least one friend of a different cultural background to their own.

However, some notable differences were found when the group of students who identified with a specific non-Anglo-Celtic ancestral background were considered (see table 5.20). Here, the results indicated that those who had all three of their friends of their own cultural background performed notably worse than those who had at least one friend of a cultural background other than their own. Those with at least one friend from another cultural background had a mean GPA and SPR of 59.4 and 0.75 respectively compared with only 50.1 and 0.66 for those with all three friends of their own cultural background. The lower performance of the latter group is made up principally of a much larger mean rate of actual failure, 18 %, compared with only 8 % for those with at least one friend from another cultural background.

Table 5.20: Social integration of specific non-Anglo-Celtic identifying students by 100 % of course passed, GPA and SPR.

	All three friends of same cultural background	At least one friend from a different cultural background
N	7	37
% passing 100 %	53.8	56.1
N	12	61
Mean GPA	50.1	59.4
N	13	66
Mean SPR	0.66	0.75
Mean % Fail	17.8	7.5
Mean % WNF[1]	11.3	14.8

[1] WNF: Withdraw no fail.

A partial explanation for this result may be that those from non-Anglo-Celtic identifying backgrounds (and therefore non-English speaking backgrounds) were those most likely to have English language difficulties inhibiting academic progress. Those who socially integrated and had Anglo-Celtic identifying friends (and therefore strong English speaking friends) may have been more able to overcome difficulties related to the English language than those with all three of their closest friends from their own non-English speaking background.

Chapter 6

Academic Achievement in 1991 and Student Progression

This chapter consists of the cross-analysis of 1991 academic results with the questionnaire data for those students who re-enrolled in 1991. Comparisons were made with the findings from the analysis of the 1990 academic achievement data to establish whether or not significant differences in academic achievement between particular groupings of students for the 1990 data remained for their 1991 studies. For example, it was possible to ascertain whether or not significant differences in academic achievement still existed for the 1991 data in relation to fathers' education levels or student age. Differences in academic achievement between various birthplace groups were also investigated to find if the differences evident for the 1990 data persisted for the 1991 data.

As the vast majority of students in the sample (87%) were commencing study at the University of Adelaide for the first time (with the vast majority of these also commencing tertiary study for the first time), comparisons between 1990 and 1991 academic results for various groupings of students determined whether or not differences in first year university performance persisted in 1991 studies. In other words, an answer to the question "Is the experience of first year university enough to overcome background effects on academic performance in later years of study?" was sought in relation to a number of background factors. However, for many students, inability to overcome certain difficulties would have resulted in dropping out from their course and not re-enrolling in 1991. To identify the background factors most likely to cause students to discontinue their study, progression rates were calculated.

General progression rates were given for various groups of students, that is, the proportion of students who continued with studies in 1991 and who further re-enrolled in 1992. These progression rates can only be taken as a rough guide as some students may not have totally discontinued their study. For example, some may have transferred to another university or just deferred their course of study for a year or two.

6.1 Overall Academic Achievement in 1991

Table 6.1 presents the percentage of total enrolments passed (distinction, credit or pass) in 1991. A 100 % pass rate was achieved by 68.9 % of the sample. As would

Table 6.1: Overall Student Progression Rates – 1991 data.

% of total enrolment passed	N	%
100	321	68.9
75 to 99	55	11.8
50 to 74	38	8.2
1 to 49	27	5.8
None[1]	25	5.4
Total	466	100.0

[1] Includes fail, withdrawal with & without fail, and incomplete fail.

be expected, this figure was approximately 12 % higher than in 1990. On the other hand, 11.2 % of students in 1991 passed less than 50 % of their course, this being less than the 18 % for the 1990 data.

The grade point average for the 1991 data was 60.4 indicating an overall 'pass' standard. This represents an increase of about 3 points on the 1990 data. The breakdown of the GPA into particular standard levels is given in table 6.2 (subjects resulting in withdrawal without fail were ignored in the construction of the GPA). Only 7.4 % of students achieved an overall distinction standard, while 30.8 % of students achieved an overall credit standard. The majority of students, 50.4 %, achieved a pass standard while a total of 11.4 % of students had an overall fail standard. These results revealed a greater proportion of students gaining a distinction or credit than in 1990, whilst a lower proportion achieved overall failure than for those who studied

Table 6.2: Overall Grade Point Average – 1991 data.

Grade Point Average	N	%
75 to 100 (Distinction)	34	7.4
65 to 74 (Credit)	141	30.8
50 to 64 (Pass)	231	50.4
0 to 49 (Fail)	48	10.5
None[1]	4	0.9
Totals	458	100.0

[1] Indicates all subjects resulted in incomplete fail or withdrawn with fail.

in 1990.

The percentage of students achieving an overall non-fail standard for all subjects in which they were still enrolled beyond the date for withdrawal without fail was 88.6 %, an increase on the 79.8 % for the 1990 data.

The higher academic standards attained by those who studied in 1991 may be explained by a number of factors. One of the most likely is that students who performed poorly in 1990 did not continue with their studies in 1991 whilst the better academic performers did. When the grade point average was used as a determinant of overall pass or fail standard for each student in their 1990 studies, it was found that only 61 % of those with an overall fail standard in 1990 re-enrolled in 1991 compared with 90 % of those who had an overall pass standard grade point average. Similarly, only 64 % of those with an overall fail standard in their 1991 studies re-enrolled in 1992 compared with 95 % of those who achieved an overall pass standard in their 1991 studies.

Another factor may be that experience of a years university study was enough to improve or overcome difficulties that some students might have had, for example, poor study habits or language difficulties.

6.2 Cross-analysis of 1991 Academic Achievement Data and Questionnaire Data

6.2.1 Gender and Academic Achievement

As table 6.3 reveals, females generally performed better than males, significantly so in the case of the grade point average. A greater proportion of females than males passed 100 % of their course load whilst females also had a higher grade point average and progression ratio than males. This finding matches the trend found for the 1990

Table 6.3: Student sex by 100 % of course passed, GPA and SPR.

	Sex	
	Male	Female
N	147	169
% passing 100 %	46.5	53.5
N	223	229
Mean GPA[1]	58.8	62.1
N	226	234
Mean SPR	0.83	0.88
Mean % Withdraw no fail	5.1	4.8

[1] t-test was significant, $p<0.01$ (2-tail).

data thus it may be concluded that gender differences in academic performance are not lessened through the completion of first year studies at university.

6.2.2 Age and Academic Achievement

The data in table 6.4 which gives the percentage of students who passed 100 % of their course load and the mean SPR and GPA for each age category for 1991 studies, revealed that students aged less than 18 years as at the first of January 1990, were consistently the best performers with the highest proportion passing 100 % of their course load and attaining the highest GPA and SPR. Further, the 18-21 year old age group was the worst performing age group with the exception of the SPR. These findings generally paralleled the findings for the 1990 data, namely, that students aged 18-21 performed worst of all whilst those aged greater than 21 or less than 18 years of age were the better academic performers. Although the trends in academic

Table 6.4: Student age by 100 % of course passed, GPA and SPR, 1991.

	Student Age as at 1st January 1990.			
	> 21	18-21	< 18	Whole sample
N	35	79	204	318
% passing 100 %[1]	64.8	60.8	73.1	68.7
N	52	128	275	455
Mean GPA[2]	58.5	58.3	61.6	60.3
N	54	130	279	463
Mean SPR[3]	0.78	0.83	0.88	0.86
Mean % Distinction[4]	22.3	7.4	12.0	11.9
Mean % Credit	30.0	29.3	30.3	30.0
Mean % Pass[5]	26.0	45.8	46.1	43.7
Mean % Fail	10.0	8.7	6.3	7.4
Mean % Withdraw no fail	5.2	6.4	4.3	5.0

[1] χ^2-test was significant, p<0.05.

[2] 18-21 group significantly different to <18 group at 0.1 level for Scheffe's test.

[3] >21 group significantly different to <18 group at 0.1 level for Scheffe's test.

[4] >21 group significantly different to both 18-21 and <18 groups at 0.1 level for Scheffe's test.

[5] >21 group significantly different to both 18-21 and <18 groups at 0.1 level for Scheffe's test.

performance differences between age groups was much the same as for the 1990 data, the magnitude of the differences in the 1992 data was much reduced.

6.2.3 Socio-economic Status and Academic Achievement

Parental Education Levels and Students' Academic Achievement

As significant differences in academic achievement were found in relation to parental education levels but not in relation to parental occupation levels for 1990 academic results, only the education level of parents was investigated in relation to students' academic performance in 1991.

Unlike the 1990 data for which all the indicators revealed that those with a father holding a degree or higher qualification performed significantly better than those with a father in the low educational group, none of these differences were evident for the 1991 data. All correlations of the academic achievement indicators with

fathers' education levels were small and insignificant. Table 6.5 shows almost identical performance of those with a father in the high or low education groups.

Table 6.5: Parental education level by 100 % of course passed, GPA and SPR, 1991.

	Father's Ed^n Level[1]		Mother's Ed^n Level[1]	
	High	Low	High	Low
N	100	208	75	236
% passing 100 %	69.4	69.3	67.6	69.4
N	143	294	109	335
Mean GPA	61.5	60.1	60.5	60.4
N	144	300	111	340
Mean SPR	0.87	0.86	0.86	0.86
Mean % Distinction	13.2	12.0	9.8	12.8
Mean % Credit	33.6	28.8	32.3	29.7
Mean % Pass	40.0	45.0	44.1	43.6
Mean % Fail	6.1	7.7	4.8	7.9
Mean % Withdraw no fail	5.9	4.3	7.3	4.0

[1] High: Degree or higher qualification. Low: Less than Degree.

With the eight original education level categories (see table C.7) considered as a continuous increasing scale, correlation coefficients were calculated for fathers' education levels with students' GPA, SPR and withdrawal without fail rates. All correlations were small and insignificant, a complete contrast to the equivalent figures for the 1990 data.

As for the 1990 data, no significant differences where found in academic achievement between those with a mother in the low or high education groups. The main difference here between the 1990 and 1991 data was that a slightly higher percentage of those with a mother in the low education group, 69.4 %, passed 100 % of their course load compared with 67.4 % of those with a mother holding a degree or higher qualification (table 6.5). This contrasts with the 1990 data for which those with a mother in the low education group trailed around 8 % behind those with a mother in the high education group in proportions passing 100 % of their course load.

Overall then, the above findings suggest that for those students continuing on to at least a second year of university education, differences in academic achievement related to the educational background of the students' parents tend to evaporate.

6.2.4 Students' Educational Background and Academic Achievement

As for the 1990 data, no statistically significant differences were found in academic achievement between students from different secondary school systems. However, the trends found in the 1991 data were virtually identical as those for the 1990 data. Those from the three main school systems, state, other independent or Catholic, were clearly ranked in that order from best to worst for all three of the main academic achievement indicators, namely, proportion passing 100 % of course load, GPA and SPR (table 6.6). Those who last attended a state secondary school had the greatest proportion passing 100 % of their course load, 74 %, compared with 66 % of those who last attended an independent school and 63 % of those who last attended a Catholic school. Those from T.A.F.E. had the lowest proportion passing 100 % of their course at 54 % whilst 71 % of those from an overseas school or college passed 100 % of their

Table 6.6: Last type of secondary school attended by 100 % of course passed, GPA and SPR – 1991 data.

	Last type of Secondary School Attended				
	State	Catholic	Other Indep.	T.A.F.E.	Overseas schooling
N	173	42	80	14	10
% passing 100 %	73.9	62.7	65.6	53.8	71.4
N	228	67	120	26	14
Mean GPA	61.7	56.5	60.3	60.7	58.0
N	234	67	122	26	14
Mean SPR	0.88	0.83	0.83	0.83	0.85
Mean % Distinction	12.4	8.0	12.1	20.0	10.5
Mean % Credit	30.4	24.9	31.6	35.9	26.6
Mean % Pass	45.4	49.6	39.6	27.0	48.2
Mean % Fail	6.7	7.1	7.9	9.6	12.3
Mean % Withdraw no fail	4.0	5.7	6.9	4.4	1.3

course. However, the sample sizes of the T.A.F.E. and overseas groups were too small to arrive at any meaningful conclusions.

For the GPA, those from state or other independent schools had much the same score with 61.7 and 60.3 respectively, the score for those from Catholic schools being lower at 56.5. The respective GPA scores for those from TAFE and overseas schools

were 60.7 and 58.0 putting these groups in much the same relative position to other schooling groups as for the 1990 data.

Although students from state schools achieved the highest SPR of all, 0.88, the lowest SPR was 0.83 for those from Catholic schools indicating that the differences in overall pass rates between the different school groups were fairly small. This indicates a levelling out from 1990 where the range of SPR scores was from 0.72 for those from Catholic schools to 0.84 for those who received their secondary schooling overseas (predominately Asian overseas students).

With regard to mean withdrawal without fail rates, the main change from 1990 where students from T.A.F.E. stood out as having an abnormally large mean withdrawal rate (see section 5.2.8), was that these students fell into line with the other school systems in 1991. As in 1990, the overseas schooling group had by far the lowest mean withdrawal without failure rate of 1.3 %, well below the average of 5.0 %.

6.2.5 Various University Course Factors and Academic Achievement

Course Preference and Academic Achievement

For the 1990 results it was found that those who were not enrolled in their first preference course performed significantly worse than those who were. However, despite the fact that a greater proportion of students who were not enrolled in their first preference course in 1990 did not re-enrol in 1991 and that a number of non-first preference course students in 1990 may have transferred to their first preference course in 1991, significant differences in academic achievement of the same or greater magnitude occurred between these two groups of students in 1991 (see table 6.7).

Of those who were enrolled in their first preference course in 1990, 72 % passed 100 % of their course load in 1991 studies compared with only 60 % of those who were not (for χ^2-test, $p<0.05$). The first preference course group also had a significantly higher GPA and SPR of 61.7 and 0.88 respectively compared with 57.0 and 0.80 for those not enrolled in their first preference course (for t-test on GPA means, $p<0.01$, whilst for SPR means, $p<0.05$).

Although the mean withdrawal without fail rates of the two groups were virtually the same, the actual fail rates were significantly different with those enrolled in their

Table 6.7: Whether or not student was enrolled in first preference course by 100 % of course passed, GPA and SPR – 1991 data.

	Enrolled in first preference course.	Not enrolled in first preference course.
N	242	75
% passing 100 %[1]	72.0	60.0
N	329	124
Mean GPA[2]	61.7	57.0
N	336	125
Mean SPR[3]	0.88	0.80
Mean % Fail[2]	5.4	13.0
Mean % Withdraw no fail	5.0	4.8

[1] χ^2-test is significant, $p<0.05$.

[2] t-test is significant, $p<0.01$ (2-tail).

[3] t-test is significant, $p<0.05$ (2-tail).

first preference course in 1990 having a mean proportion of fails of only 5.0 % for their 1991 studies compared with 13.0 % for those who were not enrolled in their first preference course.

Thus unlike some other factors investigated in relation to academic achievement, the differences related to whether or not students enrolled in their first preference course persisted with the same magnitude into the second year of study. This factor then is one of the most significant and consistent predictors of academic achievement.

Entry Qualification and Academic Achievement

Although the numbers involved for the Adult Matriculation entrants and 'Other' entrants were small, indications were that these two groups were the best overall academic performers in 1991 out of the various entrant groups listed in table 6.8. Both of these groups had the highest GPAs and SPRs whilst also having the lowest mean fail and withdrawal without fail rates than both the Australian Matriculation and Special Entry entrants. The only exception for both the Adult Matriculation and 'Other' groups was that they had the lowest proportions passing 100 % of their course load. The most notable change from 1990 to 1991 for these two groups was the vast drop in the mean proportion of withdrawals without failure, from 19 % and 15 % in 1990 to only 4 % and 1 % respectively in 1991.

For the two major entrant groups, Australian Matriculants and Special Entry people, some interesting changes from 1990 were noted. In 1990 Special Entrants and Australian Matriculation entrants had much the same level of academic performance with Special Entrants having only a slightly lower SPR and higher mean

Table 6.8: Entry qualification by 100 % of course passed, GPA and SPR – 1991 data.

	Australian matriculation	Adult matriculation	Special Entry	Other
N	287	6	18	8
% passing 100 %	69.5	54.5	69.2	66.7
N	406	11	25	12
Mean GPA	60.4	65.3	56.4	64.4
N	413	11	26	12
Mean SPR	0.86	0.90	0.78	0.93
Mean % Fail	7.2	4.3	13.1	4.5
Mean % Withdraw no fail	5.1	3.9	5.3	1.2

withdrawal without failure percentage. For 1991 studies however, although the proportions passing 100 % of their course load were virtually the same, the GPA and SPR of the Special Entrants was notably lower, whilst the mean proportion of failure was notably higher, than for the Australian Matriculant entrants. None of these differences were statistically significant though.

Course Load and Academic Achievement

With students grouped as either part-time, full-time or over-load, part-time students in 1990 were found to be by far the worst academic performers with an SPR and GPA significantly lower than for the full-time and overload groups. Although the over-load group had a lower SPR than the full-time group due to a higher mean rate of withdrawal without failure, the GPAs for these two groups were much the same.

Results from the 1991 studies data showed that of those students who re-enrolled in 1991, full-time students were still the overall best performers as was the case in 1990 (see table 6.9). However, unlike for 1990, the over-load group had a significantly lower GPA compared with the full-time group but the same as that for the part-time group. The part-time group which in 1990 had a significantly lower SPR than for both the full-time and over-load students, had a SPR only slightly lower than for the

Table 6.9: Course load by 100 % of course passed, GPA and SPR – 1991 data.

	Number of points initially enrolled in 1990[1].			
	< 24	24	> 24	All
N	88	172	61	321
% passing 100 %[2]	66.7	80.0	51.3	68.9
N	127	212	119	458
Mean GPA[3]	58.3	62.8	58.3	60.4
N	132	215	119	466
Mean SPR[3]	0.79	0.92	0.83	0.86
Mean % Distinction	12.5	13.1	9.6	12.0
Mean % Credit[4]	25.8	32.9	29.5	30.0
Mean % Pass	40.3	45.8	43.6	43.6
Mean % Fail	9.2	5.2	9.2	7.4
Mean % Withdraw no fail[5]	9.1	1.8	6.0	5.0

[1] 24 points constitutes a full years load.

[2] χ^2-test was significant, $p<0.001$

[3] 24 group significantly different to both <24 point and >24 groups at 0.1 level for Scheffe's test.

[4] <24 group significantly different to 24 point group at 0.1 level for Scheffe's test.

[5] 24 group significantly different to both <24 point and >24 groups at 0.1 for Scheffe's test.

over-load group but still significantly lower than for the full-time group. The most substantial improvement from 1990 to 1991 was for the part-time group which had a mean rate of withdrawals without fail of only 9 % in 1991 compared with 27 % in 1990.

Course Choice Factors and Academic Achievement

For the 1990 data, a number of significant differences in academic performance were found for various choice course factors between those claiming a factor to be important in choosing their course of study and those not doing so. For the 1991 data though, although the same trend in differences occurred as for the 1990 data for most factors, the differences were generally reduced or eliminated. This is indicated by the fact that there was only one statistically significant difference for the 1991 data compared with ten for the 1990 results (see tables 5.17 and 6.10).

Table 6.10: Influential course choice factors by 100 % of course passed, GPA and SPR – 1991 data.

	Importance of factor	100 % of course passed[1]	GPA[2]	SPR[2]
Matric score needed for entry	Important[3]	167	251	255
		65.5	58.7[5]	0.84
	Not Imp.[4]	146	195	199
		73.4	62.5	0.88
Unable to get in elsewhere	Important	23	29	30
		76.7	61.2	0.90
	Not Imp.	288	412	419
		68.7	60.3	0.85
Own aspirations and interests	Important	309	438	446
		69.3	60.5	0.86
	Not Imp.	6	10	10
		60.0	54.2	0.76
Personal challenge offered	Important	263	371	376
		69.9	60.6	0.87
	Not Imp.	49	73	76
		64.5	58.9	0.82
To avoid written English	Important	18	28	28
		64.3	59.2	0.85
	Not Imp.	293	414	422
		69.4	60.6	0.86
Prestige or status involved	Important	100	139	140
		71.4	59.2	0.87
	Not Imp.	212	307	314
		67.5	60.8	0.85
Content of course	Important	273	387	392
		69.6	60.7	0.86
	Not Imp.	41	61	64
		64.1	58.2	0.83
Unsure as to what else to do	Important	66	86	87
		75.9	62.4	0.90
	Not Imp.	246	358	365
		67.4	59.9	0.85

[1] Cell values are the number of cases and the percentage of each category achieving a 100 % pass.
[2] Cell values are the number of cases and the mean score for each category.
[3] Course choice factor was considered as important.
[4] Course choice factor was considered as not important.
[5] For t-test, $p<0.01$ (2-tail).

The only factor which had the same magnitude of differences as for the 1990 data was the 'Matric score needed for entry' factor. Here, of those who regarded this factor as an important course choice factor, 65.5 % passed 100 % of their course load compared to 73.4 % of those who did not. The GPA and SPR for this factor were 58.7 and 0.84 respectively for those regarding the factor important compared with 62.5 and 0.88 for those not regarding the factor as important (see table 6.10). The only other factor for which notable differences were found for the 1991 data in line with 1990 findings was the 'Own aspirations and interests' factor. As for the 1990 data, those who considered there own aspirations and interests as important in choosing their course performed notably better than those who did not.

For the 'Personal challenge offered', 'Prestige or status involved' and 'Content of course' factors, although the same trend in differences remained as for the 1990 data, the differences were smaller and not significant. For the 'To avoid written English' factor, the differences evident for the 1990 data were virtually abolished for the 1991 data, that is, those who chose their course in order to avoid written English no longer performed notably worse than those who did not.

The 1991 data revealed a reversal in the trends evident in the 1990 data for two of the factors investigated, namely, the 'Unable to get in elsewhere' and 'Unsure as to what else to do' course choice factors. For the 1990 data, those considering these factors as important performed worse in each of the academic performance indicators whilst the reverse occurred for the 1991 data. None of the differences in the 1991 data were statistically significant though.

Thus the above results indicated that the factors for which consistent notable differences in academic performance persisted into the second year of study were the 'Matric score needed for entry' and the 'Own aspirations and interests' factors.

6.2.6 Ethnicity and Academic Achievement

Students' and Parents' Birthplaces and Academic Achievement

As was found for the 1990 data, the 1991 academic results data also revealed no large, consistent or significant differences in academic achievement between birthplace groups when classified as 'Australia' or 'Other', or, 'English speaking' or 'Non-English speaking'. This was the case when students', mothers' or fathers' birthplaces were

considered. Thus the conclusion reached for the 1990 data carried over to the 1991 findings, namely, when countries of birth were used as an indicator of whether or not a student was to be considered as coming from a non-English speaking background, the results indicated that, overall, there were no significant or large differences in academic achievement between those from English speaking backgrounds and those from non-English speaking backgrounds.

However, when academic achievement was investigated with more detailed country of birth categories, some notable changes from the 1990 situation became evident. For the student's country of birth, the 1990 data indicated that those in the 'Other English speaking', 'Asian' or 'Other non-English speaking' categories were in general the best performers whilst those born in a non-English speaking European country were by far the worst performers. Students born in Australia generally ranked second to last in academic achievement whilst students born in an English speaking country other than Australia generally performed the best (see table 5.19).

When the 1991 data were analysed a very different picture of academic performance emerged when considering students' countries of birth. For the 1991 data, the GPA scores were much the same for all the various birthplace categories at around 60 except for the 'Other Non-English speaking' category which had the highest GPA score of 67.6 (table 6.11). The group that showed the greatest change from 1990 in academic achievement were those students born in a non-English speaking European country. This group in 1990 was the worst performing group on each of the academic achievement indicators but in 1991 had the highest proportion passing 100 % of course load and the highest SPR of 0.98, whilst also having the lowest mean withdrawal without fail rate of 0.0 % (compared with 21.1 % in 1990). The GPA for this group was the same as for the total sample. Thus those students born in a non-English speaking European country had come from being the worst performers in 1990 to the best in 1991. Although caution must be taken in interpreting this result due to the low numbers involved, this result suggests that the experience of a year's study may be enough to overcome the major difficulties that this non-English speaking background group experienced in their first year of study.

The next highest ranking birthplace group in academic achievement in 1991 was the 'Other non-English speaking' group with 77.8 % passing 100 % of their course load and a SPR only slightly lower than for those born in a non-English speaking

Table 6.11: Students' and parents' birthplaces by 100 % of course passed GPA, and SPR – 1991 data.

	Students' country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	260	29	8	17	7	321
% passing 100 %	69.9	76.3	80.0	47.2	77.8	69.0
N	364	38	10	36	9	457
Mean GPA	60.2	62.0	60.4	59.1	67.6	60.4
N	372	38	10	36	9	465
Mean SPR	0.85	0.89	0.98	0.85	0.95	0.86
Mean % WNF[1]	5.6	2.5	0.0	2.5	5.1	5.0
	Mothers' country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	213	46	33	23	4	319
% passing 100 %	70.5	67.6	75.0	54.8	57.1	68.9
N	296	67	44	42	6	455
Mean GPA	60.0	61.3	59.8	61.3	63.0	60.3
N	302	68	44	42	7	463
Mean SPR	0.85	0.87	0.90	0.88	0.78	0.86
Mean % WNF[1]	5.4	4.7	2.5	2.4	20.4	5.0
	Fathers' country of birth					
	Aust.	Other English Speaking	NES[2] European	Asian	Other NES[2]	Total
N	199	55	35	22	7	318
% passing 100 %	68.2	72.4	77.8	53.7	100.0	69.0
N	286	75	44	41	7	453
Mean GPA	59.8	61.6	60.4	61.3	66.6	60.4
N	292	76	45	41	7	461
Mean SPR	0.84	0.88	0.90	0.87	1.00	0.86
Mean % WNF[1]	5.7	4.6	3.5	3.2	0.0	5.0

[1] WNF: Withdrawal Without Failure.

[2] NES: Non-English Speaking.

European country. Thus, with the exception of Asian students, those students born in a non-English speaking country who continued study after their first year were clearly the best academic performers.

Asian born students in 1990 generally performed slightly above average. However, in 1991 the rank position in academic achievement of this group was last with by far the lowest proportion passing 100 % of course load at 47.2 %, the lowest GPA of 59.1 and equal lowest SPR of 0.85. The relative fall in academic achievement of this group was attributed almost entirely to the improvement in performance of other groups.

Turning now to those students born in an English speaking country, those born in Australia performed relatively the same in 1991 as in 1990 being ranked second to last in academic achievement compared with the other categories. Students born in an English speaking country other than Australia performed relatively worse than in 1990, falling from the best performing group in 1990 to around third place in 1991. The fall in relative academic achievement of this group did not reflect a fall in academic achievement *per se* but arose due to the improvement in performance of other groups.

Some of the trends in academic achievement found in relation to students' countries of birth also carried over to the investigation of students' mothers' countries of birth. For the 1990 data it was found that those with a mother born in a non-English speaking European country were by far the worst performers whilst those with an Asian born mother clearly stood out as the best overall performers. The performance of those with a mother born in another category of country fell between those with a mother born in a non-English speaking European country and those with an Asian mother.

As for the investigation of student's country of birth and academic achievement, in 1991 the GPA for all categories of mother's country of birth were virtually the same whilst those with a mother born in a non-English speaking European country came from being the worst performers in 1990 to the best in 1991 with the highest proportion passing 100 % of their course and the highest SPR of 75.0 % and 0.90 respectively. As was the case in considering students' countries of birth, the mean withdrawal without fail rate of those with a mother born in a non-English speaking European country fell dramatically from 16.9 % in 1990 to only 2.5 % in 1991.

Those with a mother born in the 'Other non-English speaking' category remained,

as in 1990, as one of the poorer performing groups. However, the numbers involved here were too small to draw any meaningful conclusions. The results for the other groups were mixed and showed no consistent trend in academic achievement.

In considering fathers' birthplaces for the 1991 results, those with a father born in the 'Other non-English speaking' category were, as for 1990, the best academic performers in each of the performance indicators with 100 % passing 100 % of their course load and a SPR and GPA of 1.00 and 66.6 respectively. The number of students in this group for the 1991 results were, as for 1990, very low at only seven. With the 'Other non-English speaking' category to one side, all the other groups had virtually the same GPA score of about 60. Of these categories, those with a father born in a non-English speaking European country were clearly the best performers with 77.8 % passing 100 % of their course load and a SPR of 0.90. This was an improvement from 1990 where this group had middle of the range performance compared with the other categories. As with students' and mothers' birthplaces, those with a father born in a non-English speaking European country had a much lower mean withdrawal without fail rate in 1991 of 3.5 % compared with 14.6 % for 1990.

The results for the other categories were generally mixed and showed no consistent trend in academic achievement. The only other notable point was that the students with the lowest proportion passing 100 % of course load in 1991, 53.7 %, were those with an Asian father, this finding being consistent with those related to mothers' and students' birthplaces.

All the data considered, the most evident change in academic achievement from 1990 to 1991 was for students who were born in, or whose parents were born in, a non-English speaking European country. This group clearly rose from being generally the worst performing group in 1990 to the best performing group for 1991. The much higher SPR scores for this group in 1991 can be attributed in large part to the much lower withdrawal without fail rates in 1991.

6.2.7 Social Integration and Academic Achievement

In the investigation of 1990 academic results, it was found that of those students who identified with a specific non-Anglo-Celtic background, those who indicated that all three of their closest friends were of their own minority cultural background performed

notably worse in all the academic achievement indicators than those who indicated that they had at least one friend of a cultural background other than their own (see section 5.2.12).

This same trend persisted for the 1991 academic results data (see table 6.12). Those with at least one friend from a cultural background other then their own had a substantially higher proportion who passed 100 % of their course load, 69.8 %, than those who had all three friends of their own cultural background, 45.5 %. This difference was much larger than that found for the 1990 data. However, in contrast to the 1990 data, the GPAs were virtually identical for the two groups in 1991.

Table 6.12: Social integration of specific non-Anglo-Celtic identifying students by 100 % of course passed, GPA and SPR – 1991.

	All three friends of same cultural background	At least one friend from a different cultural background
N	5	37
% passing 100 %	45.5	69.8
N	11	53
Mean GPA	60.9	60.1
N	11	53
Mean SPR	0.78	0.88
Mean % Fail	14.4	8.4
Mean % WNF[1]	7.8	2.4

[1] WNF: Withdraw no fail.

The SPR for those without and those with at least one friend of a different cultural background were 0.78 and 0.88 respectively, due principally to the considerably higher mean percentage of failure of 14.4 % and mean percentage of withdrawals without fail of 7.8 % for those with no friends of a different cultural background, compared with only 8.4 % and 2.4 % respectively for those with at least one friend from a different cultural background.

Thus, at least for those who identified with a specific non-Anglo-Celtic cultural background, a consistent finding for both the 1990 and 1991 data was that those who had at least one friend from a different cultural background other than their own performed notably better than those who had all three of their closest friends from their own cultural background. These findings suggest that those who socially interact perform better than those who tend not to do so.

6.3 Progression Rates

The analysis of academic achievement thus far has only investigated the academic achievement of students within particular years of study, namely, 1990 and 1991. In this section, the progression of students from 1990 to 1991 and from 1991 to 1992 was investigated. Whether or not a student 'progressed' from one year to another was determined merely by whether or not a student re-enrolled for a further year of study. As the academic transcripts with the 1991 results also showed whether or not students had enrolled again in 1992, progression rates from 1990 to 1991 and from 1991 to 1992 were calculated. This data indicated drop out rates for various groups of students from year to year.

Only data related to students who had commenced studies at the University in 1990 were used thus eliminating students who may have completed their course in 1990, 1991 or 1992. It must be noted that these figures can only be taken as a guide as the analysis did not take into account students who may have transferred to another institution to continue their studies or students who may have deferred their studies for a year or two rather than discontinuing their studies altogether.

The progression of students is indicated in the following data by giving the proportion of commencing students in the 1990 sample who enrolled in 1991, and the proportion who enrolled again in 1992.

6.3.1 Overall Progression Rates

Of those who commenced their studies in 1990 at the University, 82.0 % re-enrolled in 1991 indicating an overall drop out rate of around 15 %. The proportion of the 1990 commencing students who enrolled in 1992 was smaller again at 76.8 % indicating a two year drop out rate of around 20 % but a smaller drop-out rate between the second and third years of study than between the first and second years of study.

6.3.2 Gender and Progression

Although the differences were not very large, the data in table 6.13 indicates that females were slightly more likely to drop out than males, despite the fact that the earlier analysis revealed females to be better academic performers than males.

Table 6.13: Gender by proportion of 1990 commencing sample who enrolled in 1991 and 1992.

N %	Proportion enrolled in 1991	Proportion enrolled in 1992
Male	198 82.5	186 77.5
Female	207 81.2	193 75.7

6.3.3 Students' and Parents' Birthplaces and Progression

For the investigation of progression rates related to students' and parents' countries of birth, the countries of birth were classified as either English speaking or non-English speaking (see table D.1 for classification of English and non-English speaking countries). As table 6.14 shows, those from non-English speaking backgrounds were more likely to re-enrol in later years of study than those from English speaking backgrounds. This was particularly evident when students' countries of birth were considered. Of those students who were born in a non-English speaking country, 88.7 % of those who commenced in 1990 enrolled again in 1991 and in 1992. On the other hand, only 81.5 % of those born in an English speaking country (including Australia) enrolled again in 1991 and only 75.7 % in 1992.

Although the differences were not as large as for the student birthplace data, the same trend in progression rates were also evident for the parental birthplace data. Those with a mother born in a non-English speaking country were slightly more likely to progress to further years of study than those with a mother born in an English speaking country. Differences associated with fathers' birthplaces were larger, with 87.4 % and 83.9 % of those with a father born in a non-English speaking country re-enrolling in 1991 and 1992 respectively compared with only 80.6 % and 75.0 % for those with a father born in an English speaking country.

These results suggested that those from non-English speaking backgrounds were more likely to persist with their studies at the university than those from English speaking backgrounds.

Table 6.14: Students' and parents' countries of birth[1] by proportion of 1990 commencing sample who enrolled in 1991 and 1992.

N Row %	Proportion enrolled in 1991	Proportion enrolled in 1992
Students' Country of Birth		
English Speaking	362 81.5	336 75.7
Non-English Speaking	47 88.7	47 88.7
Mothers' Country of Birth		
English Speaking	330 81.9	308 76.4
Non-English Speaking	77 82.8	73 78.5
Fathers' Country of Birth		
English Speaking	329 80.6	306 75.0
Non-English Speaking	76 87.4	73 83.9

[1] Classified as either English or non-English speaking, (see table D.1).

6.3.4 Secondary Schooling Type and Progression

No notable differences in progression rates related to the last type of secondary school system attended by students were found.

6.3.5 Course Preference and Progression

Some of the largest differences in progression rates were found in relation to whether or not commencing students were enrolled in their first preference course in 1990. Of those who were enrolled in their first preference course in 1990, 85.4 % enrolled in 1991 and 80.4 % in 1992. However, of those who were not enrolled in their first preference course in 1990, only 75.2 % and 69.1 % enrolled in 1991 and 1992 respectively. As these figures do not take into account the fact that some students may have transferred to their first preference course in their second or third year of study, the impact of not being enrolled in the first preference course may be even larger than is revealed by the above findings.

This finding was consistent with the earlier findings for both the 1990 and 1991

Table 6.15: Course preference by proportion of 1990 commencing sample who enrolled in 1991 and 1992.

N Row %	Proportion enrolled in 1991	Proportion enrolled in 1992
Enrolled in 1^{st} pref. course[1]	292 85.4	275 80.4
Not enrolled in 1^{st} pref. course[1]	112 75.2	103 69.1

[1] In 1990.

results, namely, that those who were not enrolled in their first preference course performed significantly worse in all the academic achievement indicators than those who were.

6.3.6 Course Load and Progression

Students were classified as either part-time, full-time or over-time depending on their course load in their 1990 studies. The proportion of each of these groups that re-enrolled in 1991 and 1992 were then calculated to give an idea of student progression. The results in table 6.15 clearly show that part-time students were by far the most

Table 6.16: Course load[1] in 1990 by proportion of 1990 commencing sample who enrolled in 1991 and 1992.

N %	Proportion enrolled in 1991	Proportion enrolled in 1992
<24 points[1]	42 61.8	38 55.9
24 points	284 83.8	267 78.8
>24 points	82 90.1	77 84.6

[1] 24 points constitutes a full years load.

likely not to re-enrol with only 62 % of 1990 enrolments enrolling in 1991 and 56 % in 1992. These figures may not represent accurate drop-out rates as some part-time students may re-enrol after a break of more than two years. However, the number of such students would be unlikely to account significantly for the much lower re-enrolment rate compared with full-time and overload students.

Over-time students were in fact the most likely group to re-enrol with 90 % and 85 % re-enrolling in 1991 and 1992 respectively followed by 84 % and 79 % of full-timers who re-enrolled in 1991 and 1992 respectively.

6.4 First Year Performance as an Indicator of Later Year Performance

By far the best predictor of later year academic performance at university was the academic performance in the first year. For the sample of 1990 commencing students, 80.7 % of those who passed 100 % of their course load in 1990 did so in 1991 whilst only 47.9 % of those who did not pass 100 % of their course load in 1990 did so in 1991 (for χ^2-test, $p<0.001$). Correlations of the 1990 and 1991 Grade Point Averages and Student Progression Ratios were also very strong and significant (for GPA $r=0.55$, $p<0.01$; for SPR $r=0.42$, $p<0.01$).

Chapter 7

Summary and Conclusions

This chapter gives an overview and draws conclusions from the major results found in the study. A general description of students in the survey and the findings made in relation to participation, academic achievement and progression of students in the University of Adelaide are discussed and their implications considered.

7.1 The Study in Review

General background details of a sample of students at the University of Adelaide were obtained in early 1990 via a questionnaire survey to establish, among other factors, socio-economic background and ethnicity of students. These data were used to give a general picture of students at the University and to identify which groups were over or under-represented in the University population compared with the general South Australian population. These findings were compared with those of previous research to find if the participation rate of various groups had changed.

Students' 1990 and 1991 academic achievement data were obtained from their academic transcripts. From these data, measures of academic achievement were calculated enabling the investigation of academic achievement related to the various factors in the questionnaire. Initially the 1990 data were analysed. The factors for which differences in academic achievement were found were investigated in relation to the 1991 academic achievement data to find if the differences persisted into the following year. Progression rates from 1990 to 1991 and from 1991 to 1992 were also calculated for various groups of students.

7.2 General Background Details of Students

Overall, males represented just under half of the sample whereas university statistics revealed that just over half of those enrolled in the subjects surveyed were male indicating that females may be more inclined to answering voluntary questionnaires than males. Notable differences in gender representation were found in relation to the specific subjects, namely, females were notably under-represented in Chemistry I and Economics I whilst over-represented in English I. However, comparison with previous statistics revealed that there was a definite trend towards gender equality in all three subjects over the years. These findings were in line with other gender statistics for higher education in Australia, namely, that females are now generally over-represented in higher education and increasing in proportion in those subject areas in which they have been strongly under-represented.

Regarding student age, those from high socio-economic backgrounds were significantly younger than those from lower socio-economic backgrounds, the age of students from high socio-economic backgrounds being generally one to two years younger than those from lower socio-economic backgrounds. This difference may be due to those from lower socio-economic backgrounds having to delay entry into university until they have formed a large enough financial base to allow them to undertake university studies rather than rely on the financial support of their parents. This may be particularly the case for mature age students who may not have had an opportunity to undertake university studies in their youth but after working for several years and becoming financially independent from parents find themselves in a position to be able to undertake university study.

The view that Adelaide University is very much a 'commuter' university was supported by the finding that only a small proportion of respondents resided in a college or hall of residence whilst two thirds resided with their parents or relations during semester time. Comparisons with earlier research suggested that there has been an increase in the proportion of students at the University of Adelaide who live away from parents. Although the age of males and females was the same for the sample, females were found to be significantly more likely to live away from home than males. Earlier research also found this trend for 1980 entrants to the university.

Students from high socio-economic backgrounds were significantly more likely to

be living at home than others. A partial explanation can be given by the fact that students from a higher socio-economic background were younger than those from a lower socio-economic background. Another contributing factor may be that parents in the higher socio-economic strata were more able to support their offspring at home while those less well off did not have the resources to support their children through university thus forcing them to be more independent and support themselves more by living away from home. Yet another factor may be that those from higher socio-economic homes were in a more supportive environment for undertaking tertiary education whereas in the lower socio-economic home, the environment and attitudes may be less conducive to tertiary study, prompting students in this situation to get accommodation outside the home.

Just over half of the sample relied on their parents/guardians as a major financial source whilst AUSTUDY was a major financial source for a quarter. Three quarters of students in the survey had paid employment as a major or minor financial source, this being a substantially larger proportion than the two fifths of 1980 entrants who relied at least in part on paid employment as indicated in earlier research. Thus much greater proportions of students are now dividing time and attention between study and work than was the case ten years ago.

Those from low socio-economic backgrounds were significantly more likely to rely on AUSTUDY as a major financial source. However, those from a higher socio-economic background were significantly more likely to rely on casual or part-time work or parents/guardians than those from lower socio-economic backgrounds. The most likely explanation for these findings is that those from lower socio-economic backgrounds had access to AUSTUDY benefits whereas those from high socio-economic backgrounds were ineligible for AUSTUDY assistance and were thus forced to rely on casual work or parents for financial support.

This is one area where some students from high socio-economic backgrounds may be considered as disadvantaged. Such students are ineligible for AUSTUDY and thus have to rely on parents or part-time work for financial support. However, if their parents are experiencing financial difficulties and do not have sufficient resources to put their children through university, or if parents' attitudes are that their children should support themselves through university despite family wealth, then the only option available for the student is to engage in part-time work, leaving less time to

devote to university studies.

7.3 Respondents' University Course

A large proportion of students in the sample, 30 %, indicated that they were not enrolled in their first preference course as specified on their tertiary education entry application form. Around three quarters of those with a parent born in an English speaking country (including Australia) were enrolled in their first preference course compared with just over half of those with a parent born in a non-English speaking European country, this group being the least likely to be enrolled in their first preference course. These differences partly explain differences in academic achievement discussed later.

The course choice factors considered important by the largest proportions of students were the 'Own aspirations and interests', 'Content of course' and 'Personal challenge offered' factors. Females were found to place significantly more importance on each of these factors than males. A significantly greater proportion of females than males also placed importance on the 'Better able to serve society', 'Cost and ease of transport' and 'Unsure as to what else to do factors'. The only factors for which males placed a significantly greater importance than females were the 'Financial rewards at end of course' and 'To avoid written English' factors. The latter finding suggests that males were less confident than females in their written English abilities which may partly explain why males were more likely to be found in the sciences, whilst females were more likely to be found in the humanities. This difference could not be explained by a larger proportion of males coming from a non-English speaking background as the reverse was in fact the case for the sample. The differences found in relation to gender generally indicated that males were less likely to be concerned with the intrinsic value of a course of study but rather with what could be gained at the completion of the course.

In relation to socio-economic background, those with a parent in the high education or occupation level were significantly more likely to rate parental influence as important in choosing their course than those from a lower socio-economic background. Other indications were that students from higher socio-economic backgrounds placed less importance on the number of contact hours per week whilst they placed greater

importance on the 'unsure as to what else to do' factor compared with those from lower socio-economic backgrounds. It is unclear as to why those from lower socio-economic backgrounds placed a greater importance on contact hours per week considering that earlier analysis found that these students were less likely to be engaged in casual or part-time work than those from higher socio-economic backgrounds. A possible explanation for why those from higher socio-economic backgrounds placed a greater importance on the 'Unsure as to what else to do' factor may be that as these students were more greatly influenced and guided by their parents to undertake a particular course at university, they may have given less consideration to or been less aware of other options available to them than those who were not as influenced by their parents.

A number of trends in relation to the importance placed on various course choice factors were also found in relation to parental birthplace. Those with an Asian born mother or father were more likely to consider the 'Parents' attitudes and influence', 'To avoid written English', 'Prestige or status involved', 'Contact hours per week' and 'Financial rewards at end of course' factors as important than any of the other birthplace categories. Those from a non-English speaking European background were the next most likely to consider the factors 'Contact hours per week' and 'Prestige or status involved' as important course choice factors. Those with an Asian parent were the only non-English speaking background group that stood out as placing importance on avoiding written English, indicating that this group of students is one of the most likely to require English language tuition.

7.4 Language Background of Students

With the family, over four fifths of students claimed to use English only while just under a tenth used mainly English plus another tongue. Only a very small proportion used another language only or mostly. A similar pattern of language usage existed with students' friends except that there was a tendency for more English to be spoken. Comparisons with research on 1985 entrants to the University of Adelaide indicated that slightly lower proportions of students where languages other than English were used in the home entered the University in 1990 than in 1985. Of non-English language usage with the family, European languages represented about two thirds of

language usage followed by Asian languages at around a third.

The study revealed that a greater proportion of students had been exposed to Asian languages in primary school than in secondary school. Furthermore, students were more likely to study an Asian language at university than at either primary or secondary school. This was the case even when the bulk of Asian overseas students were omitted from the sample. These findings suggest that more Asian language programmes should be introduced at the primary and secondary levels as the demand for Asian language study was clearly evident at the university level.

French was consistently the most studied language at primary and secondary school followed by German and Italian. At university, French and German remained the most popular languages followed by Japanese. Overall, over a third of the sample had studied a language other than English at at some stage during their primary schooling whilst the corresponding figure for secondary school was just over three quarters.

7.5 Participation in the University

7.5.1 Socio-economic Status and Participation

The investigation of parental education and occupation levels in relation to participation at the university clearly indicated that those with more highly educated parents, or with parents in high status occupations, were still strongly over-represented in the university student population, whilst those with a parent with a lower level of education or holding a low status occupation were clearly under-represented. Comparisons with data on 1985 entrants to the University of Adelaide indicated that the degree of over-representation of those with highly educated parents had, if anything, increased over the past five years whilst the degree of over-representation of those with a parent holding a high status occupation appeared to have decreased slightly.

Students who last attended an independent school were found to be still markedly over-represented in the university student population whilst those from state schools were greatly under-represented. Those from the Catholic school system were virtually equally represented at the university. Comparisons with data on 1985 entrants to the University of Adelaide indicated that the representation of school systems was much the same as it was five years earlier.

7.5.2 Ethnicity and Participation

Indications were that Australian born students were notably under-represented in the university student population whilst for each other category of student birthplace over-representation was the case. Those born in non-English speaking countries were not found to be under-represented in the university student population. Previous research had also shown with respect to higher education institutions in South Australia and Australia that, when age is taken into account, those from non-English speaking backgrounds could not be considered as under-represented in higher education.

When parental birthplace was investigated, it was found for the 1990 sample that those with a parent born in Australia were roughly represented in the same proportion as they were found in the South Australian population, whilst those with a parent born in an English speaking country other than Australia or a non-English speaking European country were under-represented. Those with an Asian parent or a parent in the 'Other non-English speaking country' category were over-represented.

Although these findings differed from those considering the students' countries of birth, they did nevertheless indicate that overall, those with a parent born in a non-English speaking country were not under-represented at the University of Adelaide. Previous research, using parental birthplace as an indicator of whether those from non-English speaking backgrounds were under or over-represented in higher education in Australia and South Australia, also found that those with a parent born in a non-English speaking country were on the whole over-represented in higher education.

Thus overall, those from non-English speaking backgrounds were not under-represented in higher education. The findings of the research project for this thesis supported this view and indicated that this was specifically the case for the University of Adelaide.

7.6 Factors Related to Academic Achievement at the University of Adelaide

Gender and Academic Achievement

The results consistently showed that females were better academic performers than males. Females performed significantly better than males in the 1990 studies, this

trend persisting for 1991 studies. Although females achieved higher grades and had higher proportions passing 100 % of course load, they were found to have a slightly lower progression rate than males. A possible explanation might be that females were more likely to take up employment or marry and leave the university before completion of their course.

Age and Academic Achievement

Those aged less than 18 years were clearly the best performers followed closely by those aged over 21 years. Those aged 18–21 were by far the worst performers. These same trends in academic achievement, although reduced, remained for students' 1991 studies.

These results suggested that direct school leavers were the better academic performers. The poorer performance of the 18–21 year old group compared with the under 18 group may be explained by the 18–21 group being more likely to contain students who failed or repeated a year in secondary school, thus indicating weaker academic abilities. The relatively high performance of those aged more than 21 years was due principally to this group being consistently the overall best performing group with regard to Faculty of Arts subjects including English, History, Anthropology and Psychology. The performance of the greater than 21 year age group in science or mathematics related subjects was generally average or worse than average.

The extra experience of the world that mature age students have may explain the better performance of these students in Faculty of Arts subjects. One way then to increase the quality of performance in many subjects in the Faculty of Arts would be to accept only those students who have deferred university entry for three or so years or to accept students who have not been continuously in the educational system.

Financial Support and Academic Achievement

In general, it was found that those who relied on AUSTUDY/ABSTUDY or casual or part-time work as a major financial source performed significantly worse than those for whom these were not major sources. On the other hand, those for whom parents/guardians or spouses were a major financial source, performed significantly better than those for whom these sources were not major.

The lower performance of those engaged in part-time work could be explained

by these students finding their combined work and study load too much to cope with but as they required the income from work, it was the study time that was reduced by withdrawing from part or all of their course load. Another factor which could contribute to the lower GPA for part-time workers was that these students had to divide their concentration and train of thought between their work and study environments, whereas those not working were more able to stay in the one train of thought, their study.

Students who indicated that AUSTUDY was a major financial source performed significantly worse than those for whom AUSTUDY was not a major source. Although the mean withdrawal without fail rates were virtually the same for the two groups, those relying on AUSTUDY had a significantly lower GPA and SPR, and a lower proportion passing 100 % of course load. A likely explanation for this situation is that although some students relying on AUSTUDY as a major financial source might be performing poorly at some subjects, rather than withdraw without fail from these subjects and become ineligible for AUSTUDY benefits, they remain enrolled in these subjects. Thus they continue to receive the full AUSTUDY benefit but perform poorly overall.

The performance of students related to dependence on various financial sources was also linked to the socio-economic background of students. This point will be discussed further in the next section.

7.6.1 Socio-economic Status and Academic Achievement

Parental education and occupation levels were used to investigate academic performance differences between those from low and high socio-economic backgrounds. In relation to parental education levels, significant differences were found only in relation to fathers' education levels. Here, those with a father who held a degree or higher qualification performed significantly better in their 1990 studies than those with a father with lower qualifications. However, the 1991 studies of continuing students showed no notable differences in performance between those from lower and those from higher socio-economic backgrounds. This situation cannot be explained by a greater proportion of those with a father in the lower education level (these students being the poorer performers in 1990) dropping out after the first year of study, thus leaving only the better performers from the lower education group in 1991, since

those with a father holding a degree were in fact less likely to progress to later years of study than those with a father in the lower education level.

Thus overall, after one year's experience of university education, differences related to the education background of the students' parents appeared to have reduced.

An investigation of parental occupation level and student academic achievement revealed no large or significant differences in any of the academic achievement indicators between those with a parent in the high occupation category and those with a parent in the low occupation category.

Socio-economic background was found to be linked to age and type of financial support of students, these factors helping to explain why those with a father holding a degree performed relatively better in 1990 studies. Firstly, those with a father holding a degree tended to represent a greater proportion of those aged less than 18 years than those with a father not holding a degree, students aged less than 18 being found to be the best performers of all.

In relation to financial support, those with a father holding a degree were more likely to be dependent on their parents as a financial source, these students generally being better performers. However, students with a father holding a degree were also more likely to rely on casual or part-time work as a financial source, such students being found to perform significantly worse than those who did not rely on part-time work as a financial source. AUSTUDY was more likely to be a major financial source for those with a father who did not hold a degree than for those with a father who did hold a degree, students who relied on AUSTUDY as a major source being found to be significantly worse performers than those who did not rely on AUSTUDY as a major source of finances.

These findings revealed one group of students who, even though they came from a high socio-economic background, were in fact disadvantaged. The group being referred to are those who could not receive AUSTUDY because their parents were earning too much. As a result they had to rely on casual or part-time work rather than their parents for their major source of finances. This may arise purely due to parental attitudes that their offspring should support themselves through university or it may be that although the parents earnt too much for their children to claim AUSTUDY, at the same time they could not afford to support their children through university due to other financial difficulties.

7.6.2 Students' Educational Background and Academic Achievement

Although no statistically significant differences were found in relation to academic achievement and last type of secondary school system attended, for both 1990 and 1991 studies, those from state schools were clearly the best overall performers followed closely by those from other independent schools. Those from Catholic schools were the worst performers.

These findings did not coincide with those of Power et al. (1986 & 1987) who found no significant or consistent differences in grade point averages or overall pass rates between 1985 entrants to the University of Adelaide who had attended different secondary school systems. Nor were any significant or consistent differences found for 1985 entrants to South Australian higher education as a whole. A number of earlier studies of students at the University of Melbourne, University of Western Australia and University of Tasmania by Hohne (1951, 1955), Anderson (1961) and Hughes (1961) respectively, all found that those from Catholic schools performed worse than those from either state or independent schools, as was the finding for the 1990 study.

The above findings indicated that those from Catholic schools were lacking the same degree of preparation for university study as those from state or independent schools.

7.6.3 Various University Course Factors and Academic Achievement

Course Preference and Academic Achievement

For students' 1990 studies, those who indicated that they were enrolled in their first preference course performed significantly better than those who indicated that they were not. A greater proportion of those who were not enrolled in their first preference course in 1990, compared to those who were, did not enrol again in 1991. In addition, some non-first preference course students in 1990 may have transferred to their first preference course in 1991. Nevertheless, of those students who did re-enrol in 1991, the same or larger differences in academic achievement as for 1990 were found in relation to 1991 studies.

Whether a student enrolls in their first preference course or not is thus one of the

most significant and consistent predictors of academic achievement at the university. The poorer performance of those not enrolled in their first preference course may be due to a lack of motivation to succeed in a course that they did not want to undertake. This raises questions as to the effectiveness of admission procedures to the university which are based principally on a Year 12 score and allow applicants to give multiple course preferences. It may be that the performance of the general university student population would be higher if a greater proportion of students were able to do their first preference course. However, unless resources are available to offer more places for the more popular courses, a more open entry type admission system is not viable.

Entry Qualification and Academic Achievement

Although the sample numbers were quite small for those with entry qualifications other than Year 12 university entrance scores, indications from students' 1990 studies were that those who gained admission via the Special Entry Scheme performed at the same level as those who gained entry through the usual matriculation (Year 12 score) avenue. It was also found that those who gained entry via Adult matriculation performed slightly better than others in subjects completed but had a higher than average mean proportion of withdrawals than others.

For students' 1991 studies, those who entered with Adult matriculation were still around the best performers in subjects completed. The 1990 studies data showed that Special Entry and Australian Matriculation entrants performed at much the same level. In contrast, although Special Entrants in 1991 had virtually the same proportion passing 100 % of their course load, they had notably lower GPA and SPR scores and a higher mean proportion of failure than Australian Matriculants. These differences were not statistically significant, however.

When withdrawals without failure were disregarded, the above findings indicated that, at least for the first year of study, those who gained admission to the university via pathways other than with the usual Year 12 score performed as well or better than those who gained entry using the Year 12 score. Indications were, however, that those who gained entry via the Special Entry Scheme and who re-enrolled in 1991 were poorer performers.

Course Load and Academic Achievement

When students were grouped as part-time, full-time and over-load students, full-time students were clearly the best academic performers in all the academic performance indicators in 1990, followed by over-load students and part-time students. Students in this last group were significantly poorer performers than either the full-time or overload students. The most distinguishing factor for the part-time group was the substantially larger mean withdrawal without fail rate of 27 % compared with only 4 % and 9 % respectively for the full-time and over-load students. Even when withdrawals without fail were disregarded, the significantly lower GPA for the part-time group compared with either the full-time or over-load group still showed the part-timers to be the worst performers. Despite these overall findings, the part-time group had a slightly lower mean proportion of actual failure than either the full-time or over-load students, as the finding of earlier research had also indicated (Butterfield and Kane (1969); and Power et al. (1986)).

The GPA for the over-load students was virtually the same as for the full-time students; the fact that their SPR score was lower than full-timers' was due almost entirely to a higher withdrawal without fail rate. This may in turn be explained by students enrolling in an over-load so as to experience a wider range of subjects but with the intention of withdrawing from those subjects that interest them least, or in which they are performing the worst.

For those who re-enrolled in 1991, the full-time students were still the best overall performers. In contrast to 1990, the GPA of the over-load group was significantly lower than for the full-time group and the same as that for the part-time group. The part-time group had a SPR only slightly lower than the over-load group but the proportion passing 100 % of course load was about 16 % greater than for the over-load group. The most substantial improvement was for the part-time group which had a mean rate of withdrawals without fail of 27 % in 1990 compared with only 9 % in 1991.

The most likely explanation for the much higher performance of part-time students in 1991 compared to those in 1990 is that part-time students in 1990 were far less likely to re-enrol in 1991. As most of the drop-out students would be the poorer performers, this would leave the higher performing part-time students to re-enrol in 1991 and hence the much better performance of the remaining part-time students in

1991 in comparison with the other groups of students.

Course Choice Factors and Academic Achievement

The largest and most significant differences in 1990 academic achievement in relation to the importance placed on various course choice factors occurred for the 'Own aspirations and interests', 'Personal challenge offered', 'To avoid written English' and 'Content of course' factors. Those not considering their own aspirations or interests, the personal challenge offered, or the content of the course as important, performed worse in all the academic achievement indicators (and significantly in at least one) than those who did consider these factors as important. These findings were closely linked to the importance placed on course choice factors and the academic achievement of females. As revealed earlier, females overall performed better than males. Also, a significantly greater proportion of females than males placed importance on the 'Own aspirations and interests', 'Personal challenge offered' and 'Content of course' factors.

Those who considered choosing their course to avoid written English important performed significantly worse than those who did not consider this factor important. Again, this finding was linked to gender differences as males were significantly more likely to consider this factor important in choosing their course whilst males overall performed worse than females.

Results also indicated that those who considered the 'Matric score needed for entry', 'Unable to get in elsewhere' or 'Unsure as to what else to do' factors as not important in influencing their choice of course, performed better than those who did consider these factors as important. No significant differences in academic achievement were found in relation to whether or not parents', teachers' or friends' attitudes or influences were important in choosing the course of study.

For the 1991 studies data, although the same trends as for the 1990 data occurred for most of the course choice factors, the differences were generally reduced or eliminated and all differences were insignificant except one.

7.6.4 Ethnicity and Academic Achievement

Language Usage and Academic Achievement

Students were grouped into those who used English only with their family or friends and those who spoke a language other than English at least some of the time. For both language usage with family or with friends, no significant differences were found in academic achievement between those who used English only and those who used a language other than English at least some of the time.

The same finding was made by Power et al. (1987) for 1985 entrants to the University of Adelaide. However, he found that for all 1985 entrants to higher education in South Australia, those who spoke English only at home had significantly higher grade point averages than those speaking a language other than English either exclusively, or in addition to English, at home. Thus academic achievement of those speaking a language other than English at home would seem to vary from institution to institution.

Students' and Parents' Birthplaces and Academic Achievement

With the countries of birth grouped as 'Australia' or 'Other', or as 'English speaking' or 'Non-English speaking', no large or significant differences in academic achievement were found in relation to students' or parents' countries of birth. This was the case for both the 1990 and 1991 studies data. Thus on the whole, when countries of birth were used as an indicator of whether or not a student was to be considered as coming from a non-English speaking background, the results indicated that there were no significant or large differences in academic achievement between those from English speaking backgrounds and those from non-English speaking backgrounds.

When the academic achievement data were broken down into more detailed country of birth categories, some differences in academic achievement were identified. For the 1990 data, although some different trends in academic achievement occurred depending on whether students', mothers' or fathers' birthplaces were considered, the general overall trend was that those with a non-English speaking European background were the worst overall performers whilst those born in, or with a parent born in, Asia or the 'Other non-English speaking' category were generally amongst the best performers. Those with English speaking country origins (including Australia)

were generally ranked in between the best and worst performers.

The overall worst performance of non-English speaking European background students is partially explained by these students having by far the lowest proportion enrolled in their first preference course, 56 %, compared with 70 % for the whole sample. As revealed earlier, those who were not enrolled in their first preference course performed significantly worse than those who were. Also, those from non-English speaking European backgrounds were found to be the most likely group to have attended a Catholic secondary school, students from this school sector being found to be the worst overall performers.

For those students who re-enrolled in 1991, a very different picture of academic achievement related to ethnic background was found. Here, students born in or with a parent born in a non-English speaking European country were the overall best academic performers, a complete turnaround from being the worst performing group in 1990. One of the major contributing factors for this change was the relatively much lower withdrawal without fail rates for this group in 1991 than in 1990. The 'Other non-English speaking' background group was generally the second best performing group. Thus, with the exception of Asian students, those from a non-English speaking background who continued with their studies in 1991 were clearly the best overall academic performers. The results suggest that the experience of a year's study may be enough to overcome the major difficulties that those from non-English European backgrounds may have experienced in their first year of study.

Asian students or students with an Asian parent were clearly the worst ranked performing group in 1991 compared to 1990 when this group performed slightly above the average. The fall in the relative rank position of this group can be attributed almost entirely to the improvement in the performance of other groups. Those born in or with a parent born Australia were generally ranked around second to worst in academic performance whilst those born in or with a parent born in another English speaking country were generally ranked in between the best and worst performing groups.

With students' and parents' countries of birth classified as either English or non-English speaking, student progression rates were calculated. Results showed that those from a non-English speaking background were notably more likely to re-enrol in later years than those from English speaking backgrounds. In other words, those

from non-English speaking backgrounds were more likely to persist with their study at the university than those from English speaking backgrounds. This may be linked to the fact that those from non-English speaking backgrounds were more strongly driven by the perceived prestige or status that completion of a university course would give them and the fact that these students were more strongly influenced by their parents' attitudes and influence than those from English speaking backgrounds.

Social Integration and Academic Achievement

Students were asked to think of their three closest friends and to give what number of these were of British or Anglo-Celtic background, their own cultural background (if other than British/Anglo-Celtic), or a minority cultural background other than their own. For students who identified specifically with an Anglo-Celtic background, no large or significant differences were found in academic achievement between those who claimed to have all three of their closest friends of Anglo-Celtic background and those having at least one friend of a different cultural background to their own.

However, for those students who identified with a specific non-Anglo-Celtic ancestral background, those who had all three of their friends of their own cultural background performed notably worse than those who had at least one friend from a cultural background other than their own. This was the case for both the 1990 and 1991 data. These findings suggest that those who socially integrate perform better than those who tend not to do so.

7.7 Directions for Further Research

Although this study investigated academic achievement with regard to ethnicity over two years, further research investigating later years of study and eventual graduation rates would be valuable in determining over or under-representation of various ethnic groups actually completing their university studies. As the study found considerable changes in academic achievement from 1990 to 1991 for some specific ethnic groups, particularly those from non-English speaking European backgrounds, more detailed research as to why such ethnic groups improved so markedly in later years would be valuable. Such findings also point to the need for research into the validity of admission procedures, particularly in relation to particular ethnic groups that are

poor performers in the first year of their university studies but who later prove themselves to be the best overall academic performers after a year's experience.

As those who were not enrolled in their first preference course were found to perform significantly worse than those who were, another possible research avenue is the investigation of why this occurs and again, the effectiveness of admission procedures that do not allow a larger proportion of students to enrol in their first preference course.

The study found that those students who relied on part-time or casual work as a major financial source performed significantly worse than those who did not rely on these sources as major financial sources. As any change in the economic climate, government financial assistance to students (AUSTUDY), or the way students are required to pay their fees is likely to effect the proportion of students relying on part-time work as a major financial source and thus the general academic achievement of the student body, such changes need to be monitored and their resulting effects on academic achievement investigated.

Another research topic could be the investigation of why those aged 18–21 years were consistently the worst academic performers. An investigation of the academic achievement of those who repeat a year at secondary school, particularly Year 12, may partly explain this situation. Specific research into the teaching methodologies of the state, independent and Catholic school systems would help explain why those from independent schools are the most successful in gaining entry to the university whilst those from state schools are the best overall academic achievers, and why those from Catholic schools are generally the worst performers despite achieving a participation rate at the university equivalent to the proportion of Catholic school educated persons in the wider community. These findings again prompt research into the effectiveness of admission procedures to the university.

7.8 Equity, Ethnicity, Participation and Disadvantage

Research findings indicated that those from privileged backgrounds were still very much advantaged in gaining entry to higher education. Those with parents who had a degree or higher qualification, or who had a high status occupation, were over-

represented in the university student population. In addition, those from independent schools were over-represented whilst those from state schools were under-represented in the university. The over-representation of those from high socio-economic backgrounds appeared not to have changed significantly over the past five years at the University of Adelaide.

The under-representation that females have traditionally had in higher education appears to have been overcome with females now being, on the whole, slightly over-represented. However, they continue to be under-represented in traditionally female under-represented subject areas such as chemistry and economics, although the degree of under-representation is decreasing.

On the whole, those from non-English speaking backgrounds were found to be over-represented in higher education, particularly when the age structures of ethnic communities in the wider population were considered. This was the finding of previous research and that of the thesis study of those at the University of Adelaide. Thus as far as participation rates were concerned, those from non-English speaking backgrounds could not be considered as disadvantaged.

One group of students, namely, those born in or with a parent born in a non-English speaking European country, were one group who could be seen as disadvantaged in that they had a relatively small proportion enrolled in their first preference course compared with other groups of students. Students not enrolled in their first preference course performed significantly worse than those who were. However, after a year's study, those from non-English speaking European backgrounds proved themselves to be the best academic performers.

Another specific group that could be seen as disadvantaged were those students from high socio-economic backgrounds who were ineligible for AUSTUDY and who could not rely on their parents as their main source of income. Such students were forced to engage in casual or part-time work thus lessening the time and energy available for study. Students who had to rely on part-time work as a major financial source were found to perform significantly worse than those who did not have to.

The above findings indicated that, at least in relation to the socio-economic background of the student population, the University of Adelaide could be viewed as elitist due to the strong over-representation of those from high socio-economic backgrounds. However, the unequal participation rates did not generally equate with unequal aca-

demic performance between those from high or low socio-economic backgrounds.

Females and those from non-English speaking backgrounds, these persons generally being seen as disadvantaged in the past in relation to higher education, were not only over-represented at the University of Adelaide but also performed as well as or better than other groups academically. The University of Adelaide therefore cannot be seen as elitist towards these groups in the community.

Overall then, the main way in which the University of Adelaide could be viewed as elitist would be in continuing to admit a disproportionately large number of those from high socio-economic backgrounds.

Appendix A

Pilot Study Questionnaire Form

A STUDY OF STUDENTS AT THE UNIVERSITY OF ADELAIDE

You can be sure that your answers are STRICTLY CONFIDENTIAL and will be used for statistical purposes ONLY in a way that will not identify you as an individual.

Most of the following questions can be answered by placing a circle around the number opposite the appropriate answer.

FOR EXAMPLE : If you are female you would answer the first question as follows :

1. What is your gender ? .....Male... 1 Female. . (2)

STUDENT NUMBER : ☐☐☐☐☐☐☐ (for coding of questionnaires)

1. **What is your gender ? (Please circle category)** ..... Male...1 Female...2

2. **In what year were you born ?** ..... 19☐☐

3. **If you were born outside Australia, please give your year of arrival :** ..... 19☐☐

4. **In which country were you and your parents born ?**

	Self	Father	Mother
Australia	01	01	01
U.K./Ireland	02	02	02
New Zealand	03	03	03
South Africa	04	04	04
U.S.A./Canada	05	05	05
Germany	06	06	06
Norway/Sweden/Finland/Denmark	07	07	07
France	08	08	08
The Netherlands	09	09	09
Italy	10	10	10
Greece	11	11	11
Poland	12	12	12
Hungary	13	13	13
Yugoslavia	14	14	14
Other Europe	15	15	15
Ukraine	16	16	16
Estonia/Latvia/Lithuania	17	17	17
Other U.S.S.R.	18	18	18
Latin America	19	19	19
Lebanon	20	20	20
Other Middle East	21	21	21
India	22	22	22
Sri Lanka	23	23	23
China	24	24	24
Japan	25	25	25
Hong Kong	26	26	26
Vietnam	27	27	27
Cambodia/Laos	28	28	28
Malaysia/Singapore	29	29	29
Thailand	30	30	30
Indonesia	31	31	31
Philippines	32	32	32
Other Asia	33	33	33

Other, please specify place and person : .....

5. What is your parents <u>current</u> occupation (OR <u>last</u> occupation if currently retired or unemployed) ?

	Father	Mother
Home-based Duties (e.g. house-keeping, child rearing)	01	01
Upper Professional (generally requires a university degree or equivalent e.g. law, medicine, engineering)	02	02
Lower or Semi-Professional (generally requires a diploma or equivalent e.g. journalist, librarian, nurse)	03	03
Large Scale Administrator, Employer or Manager (administers, employs or manages over 25 persons e.g. senior public servant)	04	04
Small Scale Administrator, Employer or Manager (administers, employs or manages under 25 persons e.g. manager of a small business or farm, self-employed, real-estate agent)	05	05
Clerical, Commercial and Sales Brokers (without special skill or supervising responsibility e.g. typist, teller, shop assistant)	06	06
Skilled Manual Workers and Foreman (e.g. fitter and turner, plumber, mechanic)	07	07
Semi-Skilled Manual Workers (e.g. truck driver, labourer, production line worker)	08	08
Protective Service Occupation (Police, Armed Services, Fire Brigade)	09	09
Other Service Occupations (e.g. sportsperson, caretaker, hotel worker, cleaners, hair-dressers)	10	10

Other, please specify person and job : .....

6. What is the highest education level <u>completed</u> by you and your parents ?
(Do <u>not</u> include courses <u>currently</u> being undertaken by you or your parents)

	Self	Father	Mother
Higher degree (Masters, Ph. D.)	1	1	1
Postgraduate diploma	2	2	2
Bachelor degree (Ordinary & Honours)	3	3	3
Post-secondary diploma	4	4	4
Trade certificate	5	5	5
Secondary school	6	6	6
Primary school	7	7	7
None	8	8	8

7. What was the last type of secondary school you attended ?

State 1
Catholic 2
Other Independent 3
T.A.F.E. or equivalent 4
Overseas school or college 5

Please give the name and place of the last school or college that you attended : .....

.....

8. In which course are you currently enrolled ? .....

If Honours or higher degree, please indicate department(s) : .....

9. Are you enrolled : ..... Part-time...1 Full-time...2

If Full-time, go to question 10.

If Part-time,

(a) was the provision of after-hours classes
an important factor in choosing your course ? ..... Yes...1 No...2

(b) have you previously been enrolled full-time ? ..... Yes...1 No...2

If yes, please give the reasons for changing to part-time : .....

.....

10. Would you have considered doing another course if after-hours classes were given in that course ? ..... Yes...1 No...2

If yes, please specify course : .....

11.(a) What was your entry qualification to your present course ?

Australian Matriculation 1
Adult matriculation 2
Special entry 3
Overseas qualification 4

Other, please specify : 5

(b) How many years were there between attaining your entry qualification and commencing University studies ?

1 year 1
2 years 2
3 years 3
More than 3 years 4

12. Was your undergraduate degree course your first preference course in your SATAC application ? Yes...1 No...2

If not, in which course would you prefer/have prefered to be enrolled ? .....

13. In choosing your current course, how important were each of the following factors ?

	Important		Not Important
Contact hours per week	1		2
Matric score needed for entry	1		2
Unable to get in elsewhere	1		2
Own aspirations and interests	1		2
Personal challenge offered	1		2
Better able to serve society	1		2
To avoid written English	1		2
Parents' attitudes and influence	1		2
Teachers' attitudes and influence	1		2
Friends' attitudes and influence	1		2
Prestige or status involved	1		2
Financial rewards at end of course	1		2
Opportunity to change career	1		2
Cost and ease of transport	1		2
Unsure as to what else to do	1		2

Please specify any other important factors : .....

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14. Please indicate whether or not you consider the following statements to be True, More True than False, More False than True, or False in relation to the course you are currently enrolled :

	True	More True than False	More False than True	False
(a) I feel confident that I made the right decision to come to University	1	2	3	4
(b) I get satisfaction from studying	1	2	3	4
(c) I consider that I have a heavy workload	1	2	3	4
(d) I generally keep to myself at University	1	2	3	4
(e) I am at University just marking time while I decide on my future	1	2	3	4
(f) I find my course generally easy to cope with	1	2	3	4
(g) I wish my course was more challenging	1	2	3	4
(h) I am satisfied with the relevance of the material in my course for my future career	1	2	3	4
(i) I feel I am being given a good chance to develop my best abilities	1	2	3	4
(j) I feel I am being well prepared for my future career	1	2	3	4

15. What is the highest education level that you plan to achieve ?

Doctorate (Ph. D.) 1
Masters degree 2
Postgraduate Bachelor degree 3
Post-graduate diploma 4
Bachelors degree, Honours 5
Bachelors degree, Ordinary 6

Other, please specify : 7

16. Where will you be living during semester time ?

Home with parents/relations 1
College or hall of residence 2
Sharing house or flat with friends 3
Flat or house with partner or alone 4
Boarding 5

Other, please specify : 6

17. (a) How many siblings (brothers and sisters) do you have altogether ? ..... ☐

(b) If one or more, please indicate your position in the family

(e.g. first born = 1, fifth born = 5) ..... 1...2...3...4...5...6.....
Oldest Youngest

18. Do you have any dependent children ? ..... Yes...1 No...2

19. To what extent will you be dependent on each of the following for financial support this year ?

	Major source	Minor source	Not at all
AUSTUDY/ABSTUDY	1	2	3
Other scholarship	1	2	3
Cadetship	1	2	3
Regular full-time work	1	2	3
Casual or part-time work	1	2	3
Parents/guardians	1	2	3
Spouse/partner	1	2	3

Other, please specify if a Major source : .....

20. What languages do you regularly use ?

	With Family	With Friends
English only	1	1
Mainly English plus Other(s)	2	2
Mainly Other(s) plus English	3	3
Other(s) only, no English	4	4

Please specify Other language(s) (if any) With Family : .....

With Friends : .....

21. How well are you able to read and write in :

(a) English

	Read	Write
Very well	1	1
Well	2	2
A little	3	3
Not at all	4	4

(b) Your main language other than English :

	Read	Write
Very well	1	1
Well	2	2
A little	3	3
Not at all	4	4

22. What languages have you studied at :

	Primary school	Secondary school	University
English	01	01	01
French	02	02	02
German	03	03	03
Greek	04	04	04
Italian	05	05	05
Spanish	06	06	06
Other European, please specify :	07	07	07
Chinese (Mandarin)	08	08	08
Japanese	09	09	09
Indonesian	10	10	10
Malay	11	11	11
Vietnamese	12	12	12
Other Asian, please specify :	13	13	13
Other, please specify :	14	14	14

23. Australian people are made up of diverse ancestral backgrounds, such as English, Irish, Scottish, Welsh (sometimes together refered to as Anglo-Celtic), Aboriginal, Greek, Italian, German, Chinese and many others.

With which of these ancestral backgrounds, if any, do you identify most closely ? (Please select one category only)

Anglo-Celtic (English/Irish/Scottish/Welsh)	01
Aboriginal	02
Chinese	03
Dutch	04
Greek	05
German	06
Italian	07
Lebanese	08
Polish	09
Vietnamese	10
Other, please specify :	11
Mixed ancestory	12
None	13
Overseas student	14

24. Think of your three closest friends. How many are of

British or Anglo-Celtic Australian background ..... ☐

Your own cultural background (if other than British/Anglo-Celtic) ..... ☐

Minority cultural background other than your own ..... ☐

25. Write a few sentences about what you consider to be the benefits and difficulties of studying at University : (Please use the rest of the page and overleaf)

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Appendix B

Final Questionnaire Form

A STUDY OF STUDENTS AT THE UNIVERSITY OF ADELAIDE

You can be sure that your answers are STRICTLY CONFIDENTIAL and will be used for statistical purposes ONLY in a way that will not identify you as an individual.

Most of the following questions can be answered by placing a circle around the number opposite the appropriate answer.

FOR EXAMPLE : If you are female you would answer the first question as follows :

1. What is your gender ? ..... Male... 1 Female... (2)

STUDENT NUMBER : ☐☐☐☐☐☐☐ (for coding of questionnaires)

1. Your sex : (Please circle category) ..... Male... 1 Female... 2

2. Your year of birth : .....19 ☐☐

3. If you were born <u>outside</u> Australia, your year of arrival : .....19 ☐☐

4. <u>Your</u> country of birth : .....

5. Your <u>Mother's</u> country of birth : .....

6. Your <u>Father's</u> country of birth : .....

7. Your parents' <u>current</u> occupation (OR <u>last</u> occupation if currently unemployed/retired/deceased) :

(a) Mother's occupation : .....

(b) Father's occupation : .....

8. Highest education level <u>completed</u> by you and your parents :
(Do <u>not</u> include courses <u>currently</u> being undertaken by you or your parents)

	Self	Father	Mother
Higher degree (Masters, Ph. D.)	1	1	1
Postgraduate diploma	2	2	2
Bachelor degree (Ordinary & Honours)	3	3	3
Post-secondary diploma	4	4	4
Trade certificate	5	5	5
Secondary school	6	6	6
Primary school	7	7	7
None	8	8	8

9. Last type of secondary schooling you participated in :

State 1
Catholic 2
Other Independent 3
T.A.F.E. or equivalent 4
Overseas school or college 5

10. Course you are currently enrolling for : .....

11. Type of enrolment : ..... Part-time...1 Full-time...2

12. Your entry qualification to your current course :

Australian Matriculation 1
Adult matriculation 2
Special entry 3
Degree 4
Overseas qualification 5

Other, please specify : 6

13. Was your undergraduate degree course your first preference course in your SATAC application ? Yes...1 No...2

If not, in which course would you prefer/have prefered to be enrolled ? .....

14. In choosing your current course, how important were each of the following factors ?

	Important	Not Important
Contact hours per week	1	2
Matric score needed for entry	1	2
Unable to get in elsewhere	1	2
Own aspirations and interests	1	2
Personal challenge offered	1	2
Better able to serve society	1	2
To avoid written English	1	2
Parents' attitudes and influence	1	2
Teachers' attitudes and influence	1	2
Friends' attitudes and influence	1	2
Prestige or status involved	1	2
Financial rewards at end of course	1	2
Content of course	1	2
Opportunity to change career	1	2
Cost and ease of transport	1	2
Unsure as to what else to do	1	2

Please specify any other important factors : .....

.....

.....

.....

15. What is the highest education level that you plan to achieve ?

Doctorate (Ph. D.) 1
Masters degree 2
Postgraduate Bachelor degree 3
Post-graduate diploma 4
Bachelors degree, Honours 5
Bachelors degree, Ordinary 6

Other, please specify : 7

16. Where will you be living during semester time ?

Home with parents/relations 1
College or hall of residence 2
Sharing house or flat with friends 3
Flat or house with partner/alone/with own children 4
Boarding 5

Other, please specify : 6

17. (a) How many siblings (brothers and sisters) do you have altogether ? ..... ☐

(b) If one or more, please indicate your position in the family

(e.g. first born = 1, fifth born = 5) ..... 1...2...3...4...5...6.....
Oldest Youngest

18. Do you have any dependent children ? ..... Yes...1 No...2

19. To what extent will you be dependent on each of the following for financial support this year ?

	Major source	Minor source	Not at all
AUSTUDY/ABSTUDY	1	2	3
Other scholarship	1	2	3
Cadetship	1	2	3
Regular full-time work	1	2	3
Casual or part-time work	1	2	3
Parents/guardians	1	2	3
Spouse/partner	1	2	3

Other, please specify if a Major source : .....

20.(a) What languages do you regularly use ?

	With Family	With Friends
English only	1	1
Mainly English plus Other(s)	2	2
Mainly Other(s) plus English	3	3
Other(s) only, no English	4	4

Please specify Other language(s) (if any), in descending order of use :

With Family : .....

With Friends : .....

(b) How well are you able to read and write in your main Other language (if any) ?

	Read	Write
Very well	1	1
Well	2	2
A little	3	3
Not at all	4	4

21. What languages have you studied at :

Primary school : .....

Secondary school : .....

University : .....

22. Australian people are made up of diverse ancestral backgrounds, such as English, Irish, Scottish, Welsh (sometimes together refered to as Anglo-Celtic), Aboriginal, Greek, Italian, German, Chinese and many others.

With which of these ancestral backgrounds, if any, do you identify most closely ? (Please select one category only)

Anglo-Celtic (English/Irish/Scottish/Welsh) 01
Aboriginal 02
Chinese 03
Dutch 04
Greek 05
German 06
Italian 07
Lebanese 08
Polish 09
Vietnamese 10

Other, please specify : 11
Mixed ancestory 12
None 13

Overseas student 14

23. Think of your three closest friends. What number (i.e. 0,1,2 or 3) are of

British or Anglo-Celtic Australian background ..... ☐
Your own cultural background (if other than British/Anglo-Celtic) ..... ☐
Minority cultural background other than your own ..... ☐

24. What do you hope to gain from your study at the university ?

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Appendix C

Responses to Questionnaire Survey

This appendix contains the basic descriptive information as supplied directly by the questionnaire survey in table form. The order of tables relates to the order of the questions in the questionnaire (appendix B).

PLEASE NOTE : The percentages used are the valid percentages, that is, those based on the number of valid responses — not the total sample number of 818.

Table C.1: Subject representation.

Subject	N	%
English I	294	35.9
Chemistry I	384	46.9
Economics I	140	17.1
Total	818	100.0

Table C.2: Sex of students.

Sex of Student	N	%
Male	386	47.5
Female	427	52.5
Total	813	100.0

Table C.3: Histogram of students' year of birth.

Count	Midpoint	One symbol equals approximately 10.00 occurences
0	1916	
1	1919	
1	1922	
0	1925	
0	1928	
0	1931	
4	1934	
2	1937	
1	1940	
4	1943	
3	1946	
7	1949	*
10	1952	*
17	1955	**
18	1958	**
12	1961	*
13	1964	*
27	1967	***
248	1970	************************
442	1973	**
0	1976	

25 50

Histogram percentage

Total cases = 810

Mean 1969.401 Median 1972.000 Mode 1972.000 Std dev 6.496

Table C.4: Histogram of students' year of arrival to Australia (if not born in Australia).

Count	Midpoint	One symbol equals approximately 0.50 occurences
1	1924.5	**
0	1927.5	
0	1930.5	
0	1933.5	
0	1936.5	
0	1939.5	
0	1942.5	
0	1945.5	
0	1948.5	
3	1951.5	******
0	1954.5	
1	1957.5	**
2	1960.5	****
3	1963.5	******
3	1966.5	******
6	1969.5	**********
25	1972.5	**
18	1975.5	************************************
13	1978.5	**************************
15	1981.5	******************************
12	1984.5	************************
21	1987.5	**
19	1990.0	**

5 10 18

Histogram percentage

Total cases = 142

Mean 1978.007 Median 1978.000 Mode 1973.000 Std dev 9.913

Table C.5: Students' and students' parents' countries of birth.

Country of Birth	Student		Mother		Father	
	N	%	N	%	N	%
Australia	668	82.4	524	64.5	515	63.5
Austria	0	0.0	2	0.2	1	0.1
Belgium	0	0.0	1	0.1	1	0.1
Brunei	1	0.1	1	0.1	1	0.1
Cambodia	0	0.0	1	0.1	0	0.0
Canada	3	0.4	3	0.4	3	0.4
China	2	0.2	6	0.7	8	1.0
Cyprus	1	0.1	1	0.1	1	0.1
Czechoslovakia	2	0.2	2	0.2	4	0.5
Denmark	0	0.0	1	0.1	0	0.0
Estonia	0	0.0	1	0.1	0	0.0
Eygpt	0	0.0	5	0.6	2	0.2
Fiji	1	0.1	1	0.1	1	0.1
Finland	1	0.1	2	0.2	1	0.1
France	2	0.2	1	0.1	1	0.1
Germany	4	0.5	23	2.8	18	2.2
Greece	1	0.1	6	0.7	8	1.0
Hungary	0	0.0	4	0.5	2	0.2
Holland	3	0.4	8	1.0	6	0.7
Hong Kong	3	0.4	2	0.2	2	0.2
India	1	0.1	9	1.1	5	0.6
Indonesia	1	0.1	1	0.1	2	0.2
Ireland	1	0.1	4	0.5	3	0.4
Iran	1	0.1	1	0.1	1	0.1
Islam *	1	0.1	0	0.0	1	0.1
Italy	0	0.0	21	2.6	25	3.1
Japan	0	0.0	3	0.4	1	0.1
Jatta	0	0.0	0	0.0	1	0.1
Jersey	0	0.0	1	0.1	0	0.0
Jordan	1	0.1	0	0.0	0	0.0
Kenya	2	0.2	2	0.2	2	0.2
Latvia	0	0.0	3	0.4	3	0.4
Lebanon	0	0.0	1	0.1	0	0.0
Lithuania	0	0.0	1	0.1	2	0.2
Papua New Guinea	819	100.0	819	100.0	819	100.0
Malawi	2	0.2	0	0.0	0	0.0
Malaysia	24	3.0	23	2.8	26	3.2
Netherlands	1	0.1	3	0.4	4	0.5
New Zealand	8	1.0	10	1.2	9	1.1
Norway	2	0.2	1	0.1	1	0.1
Pakistan	0	0.0	0	0.0	1	0.1
Papua New Guinea	5	0.6	2	0.2	1	0.1
Philipines	1	0.1	1	0.1	1	0.1
Poland	0	0.0	6	0.7	5	0.6
Russia	0	0.0	3	0.4	0	0.0
Samoa	1	0.1	0	0.0	0	0.0
Scotland	5	0.6	7	0.9	12	1.5
Singapore	2	0.2	1	0.1	0	0.0
South Africa	3	0.4	3	0.4	4	0.5
Sri Lanka	1	0.1	2	0.2	1	0.1
Switzerland	1	0.1	0	0.0	1	0.1
Taiwan	1	0.1	1	0.1	1	0.1
Tanzania	1	0.1	1	0.1	1	0.1
Thailand	2	0.2	0	0.0	0	0.0
Tonga	0	0.0	1	0.1	0	0.0
Turkey	0	0.0	0	0.0	1	0.1
Ukraine	0	0.0	0	0.0	1	0.1
United Kingdom	33	4.1	87	10.7	100	12.3
U.S.A.	4	0.5	2	0.2	2	0.2
Vietnam	8	1.0	7	0.9	7	0.9
West Indies	0	0.0	1	0.1	1	0.1
Yugoslavia	3	0.4	9	1.1	10	1.2
Zambia	3	0.4	0	0.0	0	0.0
Total	811	100.0	813	100.0	811	100.0

* Although 'Islam' is not a country, this is how one student responded.

Table C.6: Parental occupation levels.

Occupation Category	Mother		Father	
	N	%	N	%
Home-based	168	21.9	2	0.3
Professional, technical	236	30.8	307	39.3
Administrative, managerial, executive	49	6.4	144	18.4
Clerical, sales e.t.c.	195	25.4	74	9.5
Farming, mining e.t.c.	9	1.2	56	7.2
Transport, communication	3	0.4	16	2.0
Trades, production process	42	5.5	129	16.5
Service, sport e.t.c.	45	5.9	12	1.5
Armed services	0	0.0	1	0.1
(Retired)*	9	1.2	20	2.6
(Unemployed)*	8	1.0	10	1.3
(Deceased)*	3	0.4	10	1.3
Total	767	100.0	781	100.0

*Although question 7 was worded to eliminate these categories, they were still used by a number of respondents and thus included here.

Table C.7: Students' and students' parents' education levels.

Educational Level	Student		Mother		Father	
	N	%	N	%	N	%
Higher Degree	0	0.0	23	2.9	84	10.9
Postgraduate Diploma	6	0.8	46	5.9	37	4.8
Bachelor Degree (Ord. & Hons.)	26	3.3	141	18.0	155	20.1
Post-secondary Diploma	19	2.4	87	11.1	60	7.8
Trade Certificate	13	1.6	46	5.9	116	15.1
Secondary School	733	91.6	328	41.9	230	29.9
Primary School	2	0.3	98	12.5	81	10.5
None	1	0.1	13	1.7	7	0.9
Total	800	100.0	782	100.0	770	100.0

Table C.8: Last type of secondary schooling participated in.

Secondary School Type	N	%
State	394	48.8
Catholic	128	15.8
Other Independent	215	26.6
T. A. F. E. or equivalent	47	5.8
Overseas School or College	24	3.0
Total	808	100.0

Table C.9: Course currently enrolled in.

	N	%
B.A.–B.Mus.	282	35.5
B.Sc.	280	35.3
B.E.–B.Com.	112	14.1
B.Ag.Sc.	40	5.0
B.E.(Chem.)	37	4.7
B.Sc.(Ma.)	32	4.0
B.Arch.St.	7	0.9
B.E.(Civil)	1	0.1
B.E.(Mech.)	1	0.1
M.B.,B.S.	1	0.1
Health Science	1	0.1
Total	794	100.0

Table C.10: Type of enrolment.

	N	%
Full-time	726	89.6
Part-time	84	10.4
Total	810	100.0

Table C.11: Entry qualification to current course.

Qualification	N	%
Australian Matriculation	714	88.1
Adult Matriculation	25	3.1
Special Entry	43	5.3
Degree	9	1.1
Overseas Qualification	9	1.1
Other	10	1.2
Total	810	100.0

Table C.12: Was undergraduate Degree course first preference course ?

	N	%
Yes	566	70.1
No	241	29.9
Total	807	100.0

Table C.13: Prefered course of students not enrolled in their first preference course.

	N	%
M.B.,B.S.; Health Sci.; B.D.S.	66	29.2
B.Ec.	32	14.2
Phisiotherapy	18	8.0
B.E.(Chem.)	17	7.5
B.E.(Elec.)	13	5.8
Pharmacy	9	4.0
Journalism	9	4.0
B.Sc.	8	3.5
B.Arch.St.	7	3.1
B.A.	6	2.7
Occupational Therapy	6	2.7
Speech Pathology	6	2.7
LL.B.	5	2.2
Property	3	1.3
Veterinary Science	2	0.9
B.E.(Civil)	2	0.9
Computer Systems Engineering	2	0.9
Business	2	0.9
Library Studies	2	0.9
Graphic Design	2	0.9
B.E.(Mech.)	1	0.4
Chiropractic	1	0.4
Early Child Education	1	0.4
Interior Design	1	0.4
Wildlife & Park Management	1	0.4
None	4	1.8
Total	226	100.0

Table C.14: Importance of factors influencing choice of course.

Factors	Important		Not Important	
	N	%	N	%
Contact hours per week	131	16.5	665	83.5
Matric score needed for entry	440	55.4	354	44.6
Unable to get in elsewhere	83	10.6	700	89.4
Own aspirations and interests	767	96.5	28	3.5
Personal challenge offered	634	80.8	151	19.2
Better able to serve society	359	45.8	425	54.2
To avoid written English	55	7.0	728	93.0
Parents' attitudes and influence	197	25.1	589	74.9
Teachers' attitudes and influence	131	16.7	653	83.3
Friends' attitudes and influence	93	11.8	694	88.2
Prestige or status involved	220	28.0	566	72.0
Financial rewards at end of course	438	55.1	357	44.9
Content of course	659	83.3	132	16.7
Opportunity to change career	470	59.6	318	40.4
Cost and ease of transport	161	20.4	627	79.6
Unsure as to what else to do	152	19.4	630	80.6

Table C.15: Highest planned education level.

Educational Level	N	%
Doctorate	131	17.0
Masters Degree	96	12.5
Post-graduate Bachelor Degree	58	7.5
Post-graduate Diploma	34	4.4
Bachelors Degree, Honours	305	39.7
Bachelors Degree, Ordinary	139	18.1
Other	6	0.8
Total	769	100.0

Table C.16: Place of residence during semester time.

Residence	N	%
Home with parents-relations	535	67.0
College or hall of residence	52	6.5
Sharing house or flat with friends	80	10.0
Flat or house with partner-alone-with own children	81	10.2
Boarding	40	5.0
Other	10	1.3
Total	798	100.0

Table C.17: Number of siblings.

Number of Siblings	N	%
Naught	24	3.0
One	318	40.4
Two	268	34.1
Three	112	14.2
Four	35	4.4
Five	13	1.7
Six or more	18	2.2
Total	787	100.0

Table C.18: Any dependent children ?

	N	%
Yes	45	5.7
No	738	94.1
Total	783	100.0

Table C.19: Dependence on various sources of financial support.

Financial Source	Major Source		Minor Source		Not at all	
	N	%	N	%	N	%
AUSTUDY-ABSTUDY	191	25.1	93	12.2	477	62.7
Other scholarship	8	1.1	13	1.7	737	97.2
Cadetship	1	0.1	2	0.3	744	99.6
Regular full-time work	51	6.9	9	1.2	677	91.9
Casual or part-time work	225	30.6	289	39.3	221	30.1
Parents-guardians	415	55.3	170	22.7	165	22.0
Spouse-partner	27	3.6	17	2.3	698	94.1

Table C.20: Degree of English usage with family and friends.

Degree of English Usage	With Family		With Friends	
	N	%	N	%
English only	677	84.8	691	87.5
Mainly English plus Other(s)	75	9.4	83	10.5
Mainly Other(s) plus English	30	3.8	13	1.6
Other(s) only, no English	16	2.0	3	0.4
Total	798	100.0	790	100.0

Table C.21: Languages used at home with family and friends.

Language Used	With Family		With Friends	
	N	%	N	%
African	0	0.0	1	0.9
Bahasa (Malaysia)	0	0.0	1	0.9
Bengali	1	0.8	0	0.0
Cantonese	10	7.6	5	4.5
Chinese (Mandarin)	18	13.6	14	12.7
Croation	2	1.5	1	0.9
Czech	2	1.5	1	0.9
Dutch	5	3.8	1	0.9
Estonian	0	0.0	1	0.9
Fijian	1	0.8	1	0.9
Filipino	1	0.8	1	0.9
Finnish	1	0.8	0	0.0
FooChow	2	1.5	1	0.9
French	8	6.0	13	11.8
German	18	13.6	22	20.0
Greek	7	5.3	3	2.7
Hokkien	2	1.5	3	2.7
Hungarian	4	3.0	1	0.9
Indonesian	0	0.0	2	1.8
Italian	20	15.2	6	5.5
Japanese	1	0.8	7	6.4
Latvian	2	1.5	1	0.9
Lithuanian	1	0.8	1	0.9
Malay	2	1.5	3	2.7
Norwegian	1	0.8	1	0.9
Pidgin (Papua New Guinea)	1	0.8	0	0.0
Persian	1	0.8	1	0.9
Polish	4	3.0	3	2.7
Russian	3	2.3	0	0.0
Serbo-croation	2	1.5	3	2.7
Sinhalese	0	0.0	1	0.9
Slovak	1	0.8	0	0.0
Spanish	1	0.8	3	2.7
Thai	0	0.0	1	0.9
Tongan	1	0.8	0	0.0
Ukrainian	1	0.8	0	0.0
Vietnamese	6	4.5	7	6.4
"Yugoslav"	2	1.5	1	0.9
Totals	132	100.0	110	100.0

Table C.22: Ability to read and write in main non-English language used.

Ability to :	Read		Write	
	N	%	N	%
Very Well	50	28.9	38	22.5
Well	69	39.9	62	36.7
A little	44	25.4	49	29.0
Not at all	10	5.8	20	11.8
Total	173	100.0	169	100.0

Table C.23: Languages studied at primary school, secondary school and university.

Language Studied	Primary School		Secondary School		University	
	N[1]	%[2]	N[1]	%[2]	N[1]	%[2]
Arabic	0	0.0	1	0.1	0	0.0
Bahasa (Malaysia)	2	0.4	2	0.2	0	0.0
Cantonese	1	0.2	2	0.2	0	0.0
Chinese (Mandarin)	14	3.0	17	1.7	6	6.1
Croation	0	0.0	1	0.1	0	0.0
Danish	0	0.0	1	0.1	0	0.0
Dutch	0	0.0	2	0.2	0	0.0
English [3]	91	19.7	101	10.2	30	30.6
Fijian	1	0.2	0	0.0	0	0.0
Filipino	1	0.2	0	0.0	0	0.0
French	100	21.6	352	35.6	19	19.4
German	75	16.2	265	26.8	19	19.4
Greek	20	4.3	12	1.2	0	0.0
Hungarian	0	0.0	1	0.1	0	0.0
Indonesian	34	7.3	30	3.0	1	1.0
Italian	87	18.8	74	7.5	7	7.1
Japanese	3	0.6	40	4.0	11	11.2
Latin	6	1.3	59	6.0	1	1.0
Malay	15	3.2	14	1.4	0	0.0
Persian	1	0.2	1	0.1	0	0.0
Pitanjara	0	0.0	1	0.1	0	0.0
Polish	1	0.2	1	0.1	1	1.0
Russian	0	0.0	3	0.3	0	0.0
Serbo-croation	2	0.4	0	0.0	0	0.0
Sinhalese	1	0.2	1	0.1	0	0.0
Spanish	3	0.6	2	0.2	2	2.0
Swahili	1	0.2	0	0.0	0	0.0
Swedish	0	0.0	1	0.1	0	0.0
Tamil	1	0.2	0	0.0	0	0.0
Thai	0	0.0	2	0.2	0	0.0
Ukrainian	0	0.0	0	0.0	0	0.0
Vietnamese	2	0.4	3	0.3	1	1.0
Welsh	1	0.2	0	0.0	0	0.0
Totals	463	100.0	989	100.0	98	100.0

[1] The number of students who specified the indicated language.
[2] The proportion of all non-English language study at the indicated education level.
[3] Most students obviously did not consider English when answering this question.

Table C.24: Student's perception of their ethnic identity.

Ethnic Group	N	%
Anglo-Celtic	495	63.5
Aboriginal	4	0.5
Baltic	1	0.1
Belgian	1	0.1
Bulgarian	2	0.3
Canadian	1	0.1
Chinese	19	2.4
Croation	3	0.4
Czech	1	0.1
Dutch	13	1.7
Estonian	1	0.1
French	1	0.1
Greek	10	1.3
German	48	6.2
Hungarian	3	0.4
Indian	5	0.6
Italian	26	3.3
Japanese	1	0.1
Lebanese	2	0.3
Lithuanian	1	0.1
Norwegian	1	0.1
Polish	9	1.2
Russian	2	0.3
Scandanavian	1	0.1
South African	1	0.1
Swedish	3	0.4
Ukrainian	2	0.3
Vietnamese	8	1.0
Yugoslav	4	0.5
Other	2	0.3
Mixed	53	6.8
None	37	4.7
Overseas student	17	2.2
Total	779	100.0

Table C.25: Ethnicity of three closest friends.

Number of Friends	British or Anglo-Celtic Aust. background		Own cultural background (if other than Anglo-Celtic		Minority cultural background other than one's own	
	N	%	N	%	N	%
None	44	7.1	552	88.5	455	72.9
One	57	9.1	30	4.8	122	19.6
Two	114	18.3	18	2.9	39	6.3
Three	409	65.5	24	3.8	8	1.3
Total	624	100.0	624	100.0	624	100.0

Appendix D

Recoding Tables

This appendix contains the main recoding information for responses from questions 4, 5, 6, 20(a), 21 and 23.

Also, the recoding of certain Australian Bureau of Statistics categories for comparison to questionnaire data are given.

Table D.1: Recoding of students' and students' parents' countries of birth.

Country of Birth Category			
English speaking (excluding Aust.)	Non-English speaking European	Asian language speaking	Other non-English speaking
Canada[1]	Austria	Brunei	Eygpt
Ireland	Belgium	Cambodia	Fiji
Jersey	Cyprus[2]	China	Iran
New Zealand	Czechoslovakia	Hong Kong	Islam[3]
Papua New Guinea[4]	Denmark	India	Jordan
Scotland	Estonia	Indonesia	Kenya
United Kingdom	Finland	Japan	Lebanon
U.S.A.	France	Jatta	Malawi
West Indies[5]	Germany	Malaysia	Russia
	Greece	Pakistan	Samoa
	Hungary	Philipines	South Africa
	Holland	Singapore	Tanzania
	Italy	Sri Lanka	Tonga
	Latvia	Taiwan	Turkey
	Lithuania	Thailand	Zambia
	Netherlands	Vietnam	
	Norway		
	Poland		
	Switzerland		
	Ukraine		
	Yugoslavia		

[1] Canada: classified as English speaking, not French speaking.
[2] Cyprus: considered as more 'European' than 'Turkish' for coding.
[3] Islam: although not a country, coded as Middle Eastern.
[4] Papua New Guinea: classified as 'Other English speaking' due to extensive use of English in the education system.
[5] West Indies: classified as 'Other English speaking'.

Table D.2: Recoding of languages used at home with family and friends.

Language Category		
Non-English European	Asian	Other
Croation	Bahasa (Malaysia)	African
Czech	Bengali	Fijian
Dutch	Cantonese	Pidgin (Papua New Guinea)
Estonian	Chinese (Mandarin)	Persian
Finnish	Filipino	Russian
French	FooChow	Tongan
German	Hokkien	
Greek	Indonesian	
Hungarian	Japanese	
Italian	Malay	
Latvian	Sinhalese	
Lithuanian	Thai	
Norwegian	Vietnamese	
Polish		
Serbo-croation		
Slovak		
Spanish		
Ukrainian		
"Yugoslav"		

Table D.3: Recoding of languages studied at primary school, secondary school and university.

Language Category		
Non-English European	Asian	Other
Croation	Bahasa (Malaysia)	Arabic
Danish	Cantonese	Fijian
Dutch	Chinese (Mandarin)	Persian
Estonian	Filipino	Pitanjara
French	Indonesian	Russian
German	Japanese	Swahili
Greek	Malay	
Hungarian	Sinhalese	
Italian	Tamil	
Latin	Thai	
Polish	Vietnamese	
Serbo-croation		
Spanish		
Swedish		
Ukrainian		
Welsh		

Note: 'English' remained unchanged as 'English'.

Table D.4: Recoding of students' perception of their ethnic identity.

Ancestral Category		
Non-Anglo-Celtic European	Asian	Other
Baltic	Chinese	Aboriginal
Belgian	Indian	Canadian
Bulgarian	Japanese	Lebanese
Croation	Vietnamese	Russian
Czech		South African
Dutch		
Estonian		Overseas student
French		
German		
Greek		
Hungarian		
Italian		
Lithuanian		
Norwegian		
Polish		
Scandanavian		
Swedish		
Ukrainian		
Yugoslav		

Note: The categories 'Anglo-Celtic', 'Mixed' and 'None' remain unchanged.

Table D.5: Recoding of ABS countries of birth categories.

Country of Birth Category			
English speaking (excluding Aust.)	Non-English speaking European	Asian language speaking	Other non-English speaking
Other Oceania[1]	Germany	Vietnam	Lebanon
U.K. and Ireland	Italy	Asia NEI	
America[2]	Netherlands		
Africa[3]	Poland		
	Yugoslavia		
	Europe NEI		

[1] Other Oceania: included in this category as mainly New Zealand.
[2] America: considered as principally North America.
[3] Africa: considered as principally South African.

Note: 'Australia' remains unchanged as 'Australia'.

Source: ABS. *Census 86 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2494.0

Table D.6: Recoding of ABS languages spoken at home categories.[1]

Language Category	
Non-English European	Asian
Dutch	Chinese
German	Vietnamese
Greek	
Italian	
Maltese	
Polish	
Serbian, Croation	
Spanish	

Note: 'English only' category remained unchanged whilst the 'Other & Not Stated' category was omitted.

[1]Australian Bureau of Statistics. *Census 86 – Cross-Classified Characteristics of Persons and Dwellings, South Australia*, Cat. No. 2494.0

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