



# Success or Failure in a Core University Unit: what makes the difference?

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**ABSTRACT** *Factors which have been identified as contributing to student academic success at the degree and program level in tertiary study include mode of study, student age, previous tertiary qualifications and past academic performance. Limited published Australian research is available, however, on student academic success in individual subjects. This study investigated identifiable patterns related to the academic success of three separate cohorts of students in an Early Childhood second-year Language, Literature and Literacy unit (N = 601). The data support previous research findings with regard to the effect of mode of study, previous university qualifications and past academic performance on academic success in this subject. In contrast with most previous studies, this study found a significant relationship between previous study at TAFE (college study at a Technical and Further Education institute) and failure in an academic unit, perhaps due to the timing of this unit in the students' overall program. Further implications for Early Childhood teacher education are discussed.*

## Introduction

In an era of accountability and quality auditing, it is essential for academic staff to reflect upon and review unit content and structures in the light of student achievement. Success at university seems straightforward for some students and problematic for others. This study examined factors associated with the success or failure of students enrolled in a compulsory second-year early childhood literacy unit within a 3-year early childhood degree program at an Australian metropolitan university. The study was motivated by staff concerns about a consistently high failure rate in the unit over a 2-year period. It was also seen as an opportunity to gain insight into success patterns, which might have broader ramifications for staff and students in other units of study.

Early Childhood teacher education has a unique place in the Australian higher education sector. It has moved from the function of providing staff for the developing pre-schools and day care centres at the turn of the century to being a thriving

component of the college system (such as the Sydney College of Advanced Education) to a reconstructed position within the university sector (such as the Early Childhood Schools within the University of Melbourne in Victoria and Macquarie University in New South Wales). This transition has been recognised in an international context (Lewis, Schiller & Duffie, 1992; Schiller & Lewis, 1996).

The resultant programs are characterised by the academic rigour and scholarship expected in a university, along with vocational skills expected by the employers of graduates headed for a diverse field. Employment in the Early Childhood field includes opportunities for teaching in a range of settings, including the first 3 years of school, pre-schools (for children aged 3–5 years) and long day care centres (for children from 6 weeks to school age for an extended day) as well as research, consultancy, advocacy and political activism.

### **Literature Review**

The literature suggests factors that contribute to student academic success at the degree and program level in tertiary study (Kilminster & Miller, 1989; Long, 1994; Long, Carpenter & Hayden, 1995; Terezini & Wright, 1987). These include mode of study, student age, previous tertiary qualifications and past academic performance. A diverse range of students enter Australian universities with a variety of past educational experiences, most having only a high school leaving score, and others having post-school qualifications including TAFE (Technical and Further Education institute) qualifications<sup>1</sup> or previous university experience.

#### *Relationship between Final High School Score and Tertiary Achievement*

Researchers across Australia have used a student's end-of-school assessment score to predict university performance. These studies indicate that there is a significant relationship between students' final high school results and performance in the first year at university (Lewis, 1994). The strength of relationship between high school and university achievement, however, is dependent on the particular university course being studied. Correlations are stronger for science-related than for arts-related courses (Dunn, 1982; Everett & Robins, 1991; Lewis, 1994; Manning, Killen & Taylor, 1993; West, 1988). It is, of course, impossible to observe the grades of people who do not enter university because of low scores on end-of-school assessments, a fact which results in a truncated distribution for high school results, contributing to findings of these being ineffective predictors of university success. Overall studies show end-of-school assessment scores to be "a good predictor of university performance in science and engineering courses, but the relationship is not as strong for humanities, social science and law courses" (Lewis, 1994, p. 6).

#### *Impact of Previous Study*

*Technical and further education.* Australian universities are increasingly attracting students who begin their tertiary studies at TAFE and are subsequently encouraged

by the support of Australian government policy to enter university, often with credit for their TAFE studies. The proportion of former TAFE students admitted to universities in New South Wales has risen from 5.6% of university admissions in 1991 to 11% in 1996 (Lewis, 1991). In recent years, a number of studies have compared the university performance of TAFE graduates with the performance of university students of different backgrounds. Despite methodological difficulties due to the plethora of TAFE courses undertaken by the students, the different grading systems both at TAFE and the universities, and the size of the samples, those studies undertaken since the late 1980s suggest that former TAFE students perform as well at university and often better than other students, including those admitted from high school and mature-age students admitted without credit (Burns, Davey, Hill & Leveson, 1992; Cobbin & Barlow, 1993; Hayden, 1994; Hribar & Heazlewood, 1991; Lewis, 1991, 1994; Curriculum Policy Division, 1989; Tennant, Dawes & Gowing, 1990; Watson, Alder, Spicer & Emmerson, 1993). This suggestion has been based upon a series of studies since the late 1980s, most of which have compared the results of TAFE students with those of other students, and a few of which have focused on the achievement of TAFE students alone (Bardsley & Pauley, 1987; McPhee, 1988; Quirk, 1988).

An exception to this general conclusion was found by West (1988) who researched the achievement and persistence rates of TAFE graduates in a large technological institution over 6 years. He concluded that the completion and persistence rates of TAFE transfers consistently were lower than the rest of the students and that the TAFE transfers "passed significantly fewer subjects per semester at the start of their courses, but more subjects per semester than other students at the end of their courses" (West, 1988, p. 98).

An analysis of transfer students at Macquarie University from 1991 to 1995 undertaken by the Management Planning Information Unit (MPIU, 1996) found that former TAFE students (who represent 4.5% of students) perform poorly, relative to other students. The grade point averages (GPAs)<sup>2</sup> of the TAFE students were the lowest of any category of entrant. MPIU found that 58% of candidates with a TAFE qualification discontinued their early childhood degree studies at Macquarie for the period 1991-1995. Some care is needed in interpreting this result, in that the different persistence rates of on and off campus students have not been identified. The combination of full-time work and part-time external study in addition to family responsibilities is no doubt a factor here.

*Higher education.* As part of a larger study, McClelland and Kruger (1993) investigated the performance of students at the University of Queensland who had performed well in a previous university course. They concluded that students who performed well in a previous tertiary course had a greater likelihood of performing well in a subsequent course. The Macquarie University study cited previously (MPIU, 1996), however, showed that candidates who entered with a completed degree (12.5% of students) performed better than the TAFE candidates, but worse than the school leavers.

### *Mode of Study*

The Australian higher education system has a long history of offering degrees in two study modes: internal (on campus) and external (distance education). Internal students attend regular classes each week on campus while external students receive study packages in the mail and attend intensive on-campus study sessions often on weekends or in university holidays. There is some literature to indicate that studying externally is related to lower academic achievement. One study found that the external mode of study had adverse effects on progression rate no matter what the student's previous qualification (McClelland & Kruger, 1993, p. 22). Long (1994) also concluded that there is some evidence of lower academic achievement and higher failure rates for off-campus students.

### *Age*

While some studies show that older students perform better than younger ones (MPIU, 1996), there are exceptions (e.g., Long, 1994; McClelland & Kruger, 1993). A Western Australian study found that older students outperformed younger students in Arts but not in Science (Smythe, Knuiman, Thornett & Kiiveri, 1990). Data from 10 Victorian universities indicated that students over 25 years of age performed better than younger students in 3 of the 10 universities studied. In the case of another three institutions, the opposite result was found (Dobson & Sharma, 1993). South Australian studies indicated that school leavers were more successful than candidates with full or partial qualifications, who were presumably older (Power, Robertson & Baker, 1987).

### **The Present Study**

The demands for working in the Early Childhood field are clearly evident in an academic subject such as Early Childhood Language, Literature and Literacy which includes the theory of the component disciplines as well as the teaching strategies necessary for effective practice. This subject is a compulsory semester length unit in the (regular, full-time) second year of the University's Early Childhood undergraduate program. At the time of this study, it was required, whether the student was enrolled in the 3-year Bachelor of Teaching or the 4-year Bachelor of Education in Early Childhood. The unit introduces the theory and practice of early childhood language, literature and literacy. It begins with an exploration of the literary qualities and literacy potential of a range of children's literature and also introduces functional grammar. The focus then moves to children's language development, as they move from home to school. Reading and writing processes are explored, as well as implementation and evaluation strategies.

For students who entered the university with Advanced Standing for a TAFE Associate Diploma specialising in Child Studies, this was often one of the first two subjects they undertook in the first semester of their degree program. Credit was granted to these students for the prerequisite unit and they were expected to perform

at the same level as continuing full-time second-year students. In addition, many of these students chose to combine work in child care centres with external study. While their TAFE qualifications enabled them to work in the child care field, they had limited career prospects without a university Early Childhood degree.

During the period studied, the subject was offered in two modes. All students had a required set of textbooks and an extensive reading list. For internal (on-campus) mode students (generally, approximately 80% of whom were full-time students) it was team taught through two, 1-hour, lectures (all students in a lecture theatre) plus a 1-hour tutorial session (approximately 25 students in a tutorial room) per week. The tutorials were used to explore issues raised in the readings and lectures and to provide opportunities for small group practical activities. A guest lecturer provided some of the input on children's literature. Other material was taught by staff who both gave lectures and had responsibility for tutorial group sessions and marking. External (off-campus) mode students (generally, approximately 80% of whom were studying part-time) received printed study materials which included a study guide and a book of readings. From 1995, these were supplemented by audiotapes of internal lectures. In addition, these students were required to attend a 2-day intensive on-campus session to facilitate interactions with staff and other students. All students attended a range of scheduled activities over the 2 days, including lectures, tutorials, videos and library tasks.

Staff involved in teaching the unit over the 3 years included an experienced senior member of staff as co-ordinator and a consistent team member with discipline expertise. One other team member participated only in 1994. The person who replaced her on the team in 1995 was present for the remainder of the study. Regular team meetings were held to support the presentation of the unit material and moderate student assessment.

Several contextual factors are relevant to the study, some of which will be further highlighted in the discussion. For example, in 1994 while awaiting the completion of a new building to house Early Childhood, classes were held in temporary accommodation on a new campus. This was unsettling for all staff and students, and affected factors such as communication (e.g., students experiencing difficulty finding staff) and the availability of library and teaching resources. As mentioned previously, another important change was the 1995 introduction of taped internal lectures to send to external students. This step was taken for equity reasons, in an effort to improve the quality of education for those studying externally.

## **Method**

### *Design*

The present study analysed patterns related to the academic success of students in an Early Childhood second-year Language, Literature and Literacy unit over a 3-year period. Factors of particular interest included mode of study, geographical location of residence, Tertiary Entrance Rank (TER)<sup>3</sup>, student age, and previous tertiary or TAFE qualifications.

TABLE 1. Student profiles according to mode of study and post-school qualification

Year ( <i>n</i> )	Study mode	Qualification			
		None	TAFE	University	Partial university
1994 ( <i>N</i> = 187)	Internal % ( <i>n</i> )	73.6 (95)	13.2 (17)	4.7 (6)	8.5 (11)
	External % ( <i>n</i> )	20.0 (11)	72.7 (40)	5.5 (3)	1.8 (1)
1995 ( <i>N</i> = 194)	Internal % ( <i>n</i> )	69.0 (98)	11.3 (16)	12.0 (17)	7.7 (11)
	External % ( <i>n</i> )	7.7 (4)	71.1 (37)	15.4 (8)	5.8 (3)
1996 ( <i>N</i> = 220)	Internal % ( <i>n</i> )	74.1 (120)	8.6 (14)	3.1 (5)	14.2 (23)
	External % ( <i>n</i> )	22.8 (13)	56.1 (32)	12.3 (7)	8.8 (5)

### Participants

Participants consisted of three separate cohorts of students who completed the academic unit from 1994 to 1996 (*N* = 601). Students who failed and subsequently repeated were included only in their first attempt at the unit. The age range was similar across cohorts, ranging from 19 to 56 in 1994, 19 to 52 in 1995 and 19 to 47 in 1996 (median ages 22, 22 and 21 years, respectively). The profile of students in each of the three cohorts is presented in Table 1, with respect to mode of study (internal or external) and post-school qualification (either none, TAFE, completed university degree, or an incomplete university degree). Table 2 shows proportions of students according to mode of study and geographical location (metropolitan or

TABLE 2. Student profiles according to mode of study and geographical location

Study mode	Metropolitan (%)	Non-metropolitan (%)
1994 ( <i>N</i> = 187)		
Internal	67.4	2.1
External	17.1	13.4
1995 ( <i>N</i> = 194)		
Internal	72.7	0.5
External	13.9	12.9
1996 ( <i>N</i> = 220)		
Internal	74.1	0
External	16.4	9.5

*Note:* percentages are calculated within each cohort.

TABLE 3. Percentage of 1994–1996 cohorts awarded each unit grade

Cohort	Percentage grades			
	A	B	C/CQ	F
1994 (%)	6.4	20.9	55.6	17.1
1995 (%)	9.8	14.9	50.5	24.7
1996 (%)	5.0	10.5	72.3	12.3

non-metropolitan)<sup>4</sup>. Students enrolled externally may live in either the metropolitan or a non-metropolitan area, as shown in Table 2. Conversely, internally enrolled students may live some distance from the university. Issues of geographical location of student residence relate both to ease of university library access and potential benefits of regular exchange between staff and students and between students and students.

As over 95% of the students in each year were female, no gender analyses were conducted. Questions which have been raised about the needs of female distance education students (Hipp, 1997) are therefore of interest to the study and will be pursued in the discussion section.

### *Procedure*

Unit results were compiled for 1994, 1995 and 1996 and a database created which included relevant information for each year. Although the university expects that proportions of students being awarded each unit grade will be similar from year to year, this is not always the case depending on the level of student performance. In terms of formal assessment, grades were awarded from A for excellence through to F for fail. Table 3 depicts proportions of students from each cohort who were awarded each grade. Also included in the database were student age, gender, residential area, previous qualifications, TER result and mode of study.

### *Analyses*

The study was designed to identify factors affecting academic achievement in the unit under investigation. Relations between grade received, final high school performance (TER) and age were determined using Spearman correlation coefficients. Spearman correlations were used for two reasons. First, the TER is a ranking not a score, and as such must be treated as ordinal data. Second, the distributions for both TER and age were highly skewed (the first negatively and the second positively). In addition, the Mann-Whitney *U*-test was used to examine differences between the subgroup of students scoring 80 or over in their TER versus students scoring below 80. Mann-Whitney was also used to test for differences in achievement according to mode of study (internal or external), geographical location (metropolitan or non-

metropolitan) and past qualification. Due to the low frequencies of CQ grades, these were combined with the C grade, since both indicate a pass, and in this case allow progression to a higher level unit. Grades were coded from 1 to 4 for grades A through to F.

## Results

Several factors were related to current achievement but not in all three cohorts. The factors found to relate consistently to academic achievement in all of the three cohorts were final high school performance (TER) and previous study at TAFE. Other factors related to achievement, but not consistently across cohorts, were mode of study (1994 and 1995 cohorts) and previous tertiary qualifications (1995 cohort). There was an effect of geographical location in the 1995 cohort, but no other effects of geographical location or of age were identifiable. Results are presented in three sections corresponding to the relation between final high school and current academic achievement, the impact of previous TAFE or tertiary study on current academic success, and the relationship between achievement and mode of study.

### *The Relation between Final High School and Current Academic Achievement*

There was a significant relation between students' final high school achievement in the form of Tertiary Entrance Rankings (TER) and current unit achievement in each of the three cohorts, which while significant, was not particularly strong ( $r = 0.33$ ,  $p < 0.001$ ;  $r = 0.34$ ,  $p < 0.001$ ;  $r = 0.20$ ,  $p = 0.017$ , respectively, for the three cohorts). Table 4 depicts proportions of students receiving each unit grade according to band of TER result received for each of the three cohorts. Note that for summary purposes TER results are banded; however, in calculation of Spearman correlations raw TER results were used.

Separate analyses were conducted to compare students having a TER of 80 or higher, versus those with a TER below 80. In all but the 1995 cohort, these high-performing students in terms of final high school result were significantly more likely to get higher unit grades (1994:  $U = 1,227.5$ ,  $p = 0.001$ ; 1995:  $U = 1,621.0$ ,  $p = 0.238$ ; 1996:  $U = 1,521.5$ ,  $p = 0.015$ ).

### *The Impact of Previous Study on Achievement*

Two separate Mann-Whitney tests were conducted to test for performance differences between students with no post-school qualification and those with a TAFE qualification, and between students with no post-school qualification and those with a completed university degree.

*Performance of students with TAFE qualifications.* The first analysis revealed a significant difference in the performance of TAFE students versus those with no post-school qualification, with TAFE students performing significantly less well in every cohort ( $U = 1,967.0$ ,  $p < 0.001$  for the 1994 cohort,  $U = 1,532.0$ ,  $p < 0.001$  for



TABLE 4. Student grades according to TER result

TER band	Grade			
	A % (n)	B % (n)	C + CQ % (n)	F % (n)
1994 cohort				
80-100	50.0 (5)	35.4 (11)	21.5 (17)	4.3 (1)
60-79	20.0 (2)	51.6 (16)	41.8 (33)	34.9 (8)
40-59	10.0 (1)	6.5 (2)	15.2 (12)	4.3 (1)
0-39	20.0 (2)	6.5 (2)	21.5 (17)	56.5 (13)
Totals	100.0 (10)	100.0 (31)	100.0 (79)	100.0 (23)
1995 cohort				
80-100	18.8 (3)	26.9 (7)	20.5 (16)	11.8 (4)
60-79	62.4 (10)	53.9 (14)	56.4 (44)	23.5 (8)
40-59	18.8 (3)	7.7 (2)	14.1 (11)	17.6 (6)
0-39	0.0 (0)	11.5 (3)	9.0 (7)	47.1 (16)
Totals	100.0 (16)	100.0 (26)	100.0 (78)	100.0 (34)
1996 cohort				
80-100	66.6 (4)	38.9 (7)	17.0 (19)	21.4 (3)
60-79	16.7 (1)	50.0 (9)	71.4 (80)	71.4 (10)
40-59	0.0 (0)	0.0 (0)	7.1 (8)	0.0 (0)
0-39	16.7 (1)	11.1 (2)	4.5 (5)	7.2 (1)
Totals	100.0 (6)	100.0 (18)	100.0 (112)	100.0 (14)

Note: although the TER cut-off is 60% for school leavers entering this degree, students with a TER below 60% may be admitted to the degree based on their completion of a TAFE Associate Diploma in Social Science (Child Studies).

the 1995 cohort,  $U=2,529.0$ ,  $p=0.02$  for the 1996 cohort). Table 5 represents proportions of students from each cohort receiving each grade for students holding no post-school qualification and those with a TAFE qualification. Part of the difficulty here, of course, is that these students are generally being compared with second-year university students when they are themselves in their first year of university study.

*Performance of students with university qualifications.* The second analysis revealed a highly significant difference between the performance of students with no post-school qualification and those with a university degree in the 1995 cohort only, with students holding previous degrees outperforming those without ( $U=767.0$ ,  $p=0.001$ ). The performance of students with university qualifications relative to those with no post-school qualification is shown in Table 5.

#### *Achievement and Mode of Study*

External mode students achieved significantly lower grades than internal students for both the 1994 cohort ( $U=2,792.0$ ,  $p=0.003$ ) and the 1995 cohort

TABLE 5. Performance of students with no post-school qualification versus students with TAFE and university qualifications

Grade	Post-school qualification								
	1994			1995			1996		
	None % (n)	TAFE % (n)	Univ. % (n)	None % (n)	TAFE % (n)	Univ. % (n)	None % (n)	TAFE % (n)	Univ. % (n)
A	6.6 (7)	1.8 (1)	22.2 (2)	6.9 (7)	1.9 (1)	32.0 (8)	3.8 (5)	4.3 (2)	8.3 (1)
B	28.3 (30)	8.8 (5)	22.2 (2)	15.7 (16)	5.7 (3)	28.0 (7)	12.0 (16)	0.0 (0)	16.7 (2)
C + CQ	53.8 (57)	57.9 (33)	94.4 (4)	63.7 (65)	39.6 (21)	32.0 (8)	73.7 (98)	76.1 (35)	58.3 (7)
F	11.3 (12)	31.6 (18)	11.1 (1)	13.7 (14)	52.8 (28)	8.0 (2)	10.5 (14)	19.6 (9)	16.7 (2)
Total (N)	100.0 (106)	100.0 (57)	100.0 (9)	100.0 (102)	100.0 (53)	100.0 (25)	100.0 (133)	100.0 (46)	100.0 (12)

( $U = 2,806.5$ ,  $p = 0.006$ ), as shown in Table 6. Interestingly, there was no effect of mode of study on the achievement of the 1996 cohort.

#### *Achievement, Geographical Location and Age*

There were no identifiable effects of either geographical location or student age on performance in the unit under investigation, except in the 1995 cohort where non-metropolitan students performed significantly worse than metropolitan students (geographical location:  $U = 2,087.5$ ,  $p = 0.40$  for 1994;  $U = 1,537.0$ ,  $p = 0.009$  for

TABLE 6. Performance according to mode of study

Grade	Mode of study					
	1994		1995		1996	
	Internal % (n)	External % (n)	Internal % (n)	External % (n)	Internal % (n)	External % (n)
A	6.9 (9)	5.3 (3)	8.5 (12)	13.5 (7)	4.9 (8)	5.3 (3)
B	26.2 (34)	8.8 (5)	17.6 (25)	7.7 (4)	11.0 (18)	8.8 (5)
C + CQ	53.8 (70)	59.6 (34)	57.0 (81)	32.7 (17)	72.4 (118)	71.9 (41)
F	13.1 (17)	26.3 (15)	16.9 (24)	46.2 (24)	11.7 (19)	14.0 (8)
Total (N)	100.00 (130)	100.00 (57)	100.00 (142)	100.00 (52)	100.00 (163)	100.00 (57)

1995;  $U = 1,843.0$ ,  $p = 0.26$  for 1996; age:  $r = -0.05$ ,  $p = 0.502$  for 1994;  $r = 0.04$ ,  $p = 0.553$  for 1995;  $r = 0.09$ ,  $p = 0.195$  for 1996). It should be noted that the largely homogeneous age group in this study resulted in a problem of attenuation, which may have meant that any existing age differences were unable to be detected.

## Discussion

### *Relation between Final High School and Current Academic Achievement*

As was found in earlier studies, there was a significant but not particularly strong relationship between high school (as measured by the TER) and tertiary academic achievement. This suggests that these are not equivalent performance measures, which may be due to differences in previous and current teaching and learning experiences and related assessment tasks. While such a ranking may be a component of university success, other factors should be taken into account when predicting such success.

Little can be concluded about relationships between strength of previous achievement and current results except that having a TER over 80 did make it significantly more likely that the student would earn an A. Specific comparisons with studies mentioned previously is problematic, as most results reported relationships only with first-year university study. Students in this study included those in both their first and second year of study, depending on previous qualifications. Results reported here, however, do seem to be in the direction reported in previous research (e.g., Manning *et al.*, 1993).

### *Impact of Previous Tertiary Study*

**TAFE.** Students with TAFE qualifications performed significantly less well in terms of such indicators as earning a B or failing the unit, than did those with no post-school qualifications. While most of the literature indicates, to the contrary, that TAFE students do as well or better than do students with other points of entry, there may be another factor operating in this case. West's (1988) study indicated that TAFE students did less well early in their studies, improving later in their studies. In the course being investigated, TAFE students were predominantly in their first year of university study, so their performance may be comparable to students in the West study. In 1996, when there was little apparent effect of mode of enrolment on outcomes, the performance of TAFE entrants was still below average. This strengthens an interpretation of the association of TAFE entrants with lower grades.

Bardsley and Pauley (1987) also found that part-time students who were employed full-time were most at risk of not re-enrolling, which may indicate academic difficulties. The TAFE students in this study were often enrolled part-time, in full-time employment, and studying by distance mode, therefore being more likely to find study difficult. Discontinuance figures reported earlier (MPIU, 1996) support these assertions.

*University.* In line with previous studies, these data suggest that successful previous university study contributed to success in this unit. Although this was evident for only one cohort, it demonstrates the additional resources these students bring to further study and aligns with what one would intuitively expect in view of their previous experience. Such experience at tertiary level may be an advantage to further study because of related benefits associated with socialisation and a broad understanding of systemic expectations. Small numbers of students in this category may have limited similar findings for the 1994 and 1996 cohorts. It should be noted, however, that holding a previous university degree did not guarantee (was not consistently associated with) the achievement of a passing grade.

### *Mode of Study*

Anecdotal impressions that students find distance education more difficult than internal study were confirmed by the findings in this study, although there was an unexplained result in 1996, with internal and external mode students performing equally. Efforts to improve the external mode of offering may, therefore, be facilitating success for these students. This may be an issue of access to physical and human resources. Contextual factors relevant here included the introduction of taping of the internal lectures for distribution to external students in 1995 and 1996. Student evaluations indicated the value of these tapes to students. When tapes were first introduced in 1995 they were simply copies of tapes addressing internal students. From 1996, however, lecturers consciously addressed two audiences, adding phrases such as "and for those of you listening at your kitchen table ...." Hipp's study (1997) also notes the importance of what might be called "the human voice" in the success of female distance education students. Students in her study valued telephone contact and other personalising touches. "There seems to be an overwhelming need to connect and feel valued in these students" (Hipp, 1997, p. 43). The availability to all staff of telephone answering machines from 1995 may have also been a contributing factor. These results confirm impressions that distance education students are disadvantaged by limited student/student and student/staff interaction, as well as by limited library access. Perhaps the structure of distance education materials in this unit, the provision of taped lectures for added reference, a 2-day mandatory on-campus session and a supportive library lending system assisted these students in their study.

### *Inconclusive Results*

Earlier studies report mixed results in terms of the relationship of age to university academic success. No significant relationships between university performance and age were identified in the current study. These results may be a function of the attenuated age dispersion of this sample.

The present study was not able to investigate the relationship of gender to academic success, as the population was overwhelmingly female. Further, some results cannot be explained from available information. For example, the overall

greater proportion of Bs in 1994, As and Fs in 1995 and Cs and CQs in 1996 may be due to some unidentified difference in cohorts or unit presentation, such as differing emphases and structuring of material over time. For example, there were two major changes in the content of the unit during this period. The first was related to a change in the focus of the state-mandated curriculum document (*English K-6*), originally to introduce and then to revise the inclusion of functional grammar, which concentrated on language in use but also included new and challenging terminology. The second was a teaching team decision in 1996 to change the way the linguistic elements of the unit were introduced and assessed, including a shift in the examination from a specific text analysis to a more general examination of the understanding of concepts such as register.

### **Conclusion**

An unusually high failure rate by students precipitated this study, which investigated the success rate of 601 university students in one core semester unit in three annual cohorts from 1994 to 1996. Results of this study help to clarify many of the mixed findings of earlier research, with robust patterns identified as appearing reliably across each of the three cohorts. Results across the three samples indicated that distance education students were less likely to succeed than internal students, and further identified students in this unit with TAFE qualifications as more likely than other categories of students to be less successful and to have a higher failure rate. The fact that this second-year unit was often in their first year of university study may have contributed to these results, in that these students, having been given advanced standing to acknowledge their previous study, missed the introductory material and gradual acclimatisation to university expectations. Finally, there was a significant but not particularly strong relationship between high school achievement (as measured by the TER) and academic achievement in this unit.

Implications for teacher education include:

- the need to research aspects of unit design and delivery, particularly as experienced by different cohorts of students, with the identification of more or less effective characteristics of materials designed for external students being important;
- the value of providing "voice" support for distance education students through staff answering machines, weekly unit specific voicemail announcements and personalised recorded lectures;
- the need to pay particular attention to TAFE students who have proceeded to both internal and external university study, perhaps through strengthening the link between TAFE and university courses. Mechanisms such as bridging courses and specific liaison with TAFE staff could relate to issues such as theoretical analysis, independent learning and essay writing skills. External students in particular should benefit from strategies outlined in the discussion.

Subsequent to this study, a lower overall failure rate in 1997 may reflect the benefit of unit content restructuring for all students and the addition of another face-to-face

tutorial hour each week for internal students. These revisions were added in response to the early data emerging from this study and suggest the benefit of a follow-up study to monitor the results emerging from the unit in the current triennium. Such a future study would also benefit from richer case studies of individual students' experiences of the unit, to reflect the complexities of adult learning. Some conclusions for program and policy development must remain open until further data are available. If, for example, the lower performance of TAFE students is predominantly due to poorer academic performance, then such strategies as bridging courses and study skills provision are appropriate. If, however, poor achievement is particularly linked with external study, then approaches to improve study by distance mode must be explored. Where these two factors overlap, students would seem to be particularly at risk of difficulties with university study.

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## Note

- [1] TAFE (Technical and Further Education) qualifications of students in this study were all Associate Diplomas in Social Science (Child Studies), acquired either by 2 years of full-time or equivalent part-time study at a TAFE institution. This qualification introduces material relevant to a University degree in Early Childhood.
- [2] The GPA is a calculation reflecting overall student grades on a scale from 0 to 4 based on past units at the university.
- [3] TER is the New South Wales final senior high school assessment results from its Higher School Certificate (HSC) examination. The TER is used to determine university entrance.
- [4] The metropolitan area is defined by the Sydney Statistical Division excluding some areas nominated by the university as representing difficult access and travel time to the campus.

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