

Factors in the Persistence
of
Distance Higher Education Students

by
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Faculty of Education

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Abstract

Why some students successfully complete study through distance education and others do not is becoming an increasingly important question as distance education moves from a marginal to an integral role in the provision of tertiary education. The aims and purpose of this research were to: (1) compare and contrast the principal causes of attrition in distance higher education with a similar study conducted in 1986, (2) better characterise the contemporary experience of studying at a distance as a higher education student, particularly with consideration of online learning and (3) develop and test an updated model of student progress in distance education.

A new model of student progress in distance education was developed by critically analysing models from the literature and reviewing the origins of these models. Common elements of the earlier models were identified and the applicability of each element was assessed by critically analysing its currently accepted significance in recent research. This resulted in the development of a hybrid model consisting of elements of the models that emphasised the inherent characteristics of students and those that emphasised elements related to the learning process. The resultant model drew substantially on the model of Kember (1995), though components were added to take account of the emergence of online learning and others were removed, such as grade point average and Kember's concept of a 'recycling loop'.

The suitability of the new model was tested by surveying a group of 210 distance students at the University of Tasmania. The survey looked at study outcome (whether a student withdrew or continued/completed) and correlated this with the factors comprising the model. The data were interrogated through statistical analysis (SPSS). It was found that the majority

of the factors within the model showed some correlation to outcome. The analysis also indicated that the model had reasonable predictive value. However, the research did find that some factors did not fit well. In particular, 'motivation type' (whether the subjects intrinsically or extrinsically motivated) did not conform to the assumption in the model that students who are intrinsically motivated were more likely to continue. It appears from the findings that the type of motivation is irrelevant - rather it appeared that it is the degree of motivation that is important.

The collected data were subjected to factor analysis. This resulted in the identification to seven factors quite distinct from those used in the hybrid model developed for the study. Using this information, together with further analysis of the qualitative data collected for the study, an alternative new model was proposed and described.

In addition, the study also found that the main reasons for student attrition in distance education have changed little in 20 years despite new technologies becoming available. Indeed while online learning has solved many of the problems surrounding communication and isolation felt by most students it has caused new problems. In this study, the technology appeared to alienate a small number of students. The technology also has the potential to create unrealistic expectations about the availability of academic staff.

The qualitative part of the study indicated that poor institutional interaction (that is a student's communications, transactions and relations with university staff, systems and services) seemed to have a multiplier effect on the other factors, in that a student's negative institutional experience can exacerbate any existing adverse circumstances and cause students to withdraw. The implication of this finding was that even small improvements in students' institutional interaction could reduce attrition significantly.

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Derek Rowlands,
Hobart, November 2009



The Student (Der Student) by Rembrandt, 1606-1669
(New Carlsberg Gallery, Copenhagen)

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GLOSSARY

Attrition Rate

The attrition rate is the percentage of a cohort who fail to complete the academic requirements for a degree within the maximum period allowed.

Continuation Rate

The percentage of students who re-enrol after having enrolled during the prior regular session, semester or term.

Continuing Students

Students who having registered for a course and have completed at least one unit in one semester, enrol in at least one other unit in the next semester.

Correspondence Education (also C— Study, C— Course)

Correspondence education was the first generation in the evolution of distance education. With the advent of standardised postal delivery in the mid to late 1800s interaction between learners and teachers at a distance became possible for the first time. In the United States, correspondence became known later as "independent study" and "home study" before becoming recognised as part of the expanding field of "distance education." Interaction by surface mail is still widely used, especially in less developed countries. In the UK and Australia the term was used concurrently with 'external study' for many years.

Course

In this study, the term 'course' is used mostly in the Australian and British sense, i.e. a series of units studied comprising the work required for a degree, often in a pattern or sequence. It is synonymous with 'program' in American terminology. At the university where the research was conducted, programs of study leading to a degree are called courses. In a few contexts, such as citing North American studies, the term has been used with the US meaning of 'a unit or module of study' and this should be clear from the context.

Discontinuing Students

Students who have not yet completed the program/course for which they are registered and have enrolled in at least one unit in a semester and then do not re-enrol at all in the next semester. In the US literature such students are often termed 'drop-outs'.

Distance Education

Teaching and learning in which learning normally occurs in a different place from teaching. Some commentators stress that distance education is characterised by industrialised teaching and learning techniques such as planning, division of labour, mass production, automation, standardization, and quality control. Moore (1972) defined distance education as ‘the family of instructional methods in which the teaching behaviours are executed apart from the learning behaviours ... so that communication between the learner and the teacher must be facilitated by print, electronic, mechanical, or other devices’ (p. 76). Commentary and analysis in distance education seems to be characterised by confusion over terminology and by a lack of precision regarding the areas of education being discussed or what is being excluded, for example the following terms are often used to describe this mode of education without differentiation: distance education, correspondence study, home study, external studies, independent study, off-campus study, and sometimes open learning, as well as many more. In this paper, many of these terms have been used when citing the work of other authors—the same term being used as that used in the original text. Also, *remote study* is often used in this paper synonymously with distance education.

Drop-out

Drop-out is used to describe a student who leaves an educational institution before completing the normal course or program of study, regardless of the reasons or conditions. In some literature (from the US) a distinction is made between drop-outs and *stop-outs*. A stop-out being a student who either intends not to return to their studies or through a prolonged absence has shown no intention of doing so. Drop-out is often a pejorative term and has generally been avoided in this paper.

Dropout

To dropout is the verb used, particularly in American literature, to describe the action taken by students when they discontinue their studies before the completion of a course or program. When used, there tends to be an implication that they do not plan to return to study in the near future.

External Study / External Students

These terms are usually used to describe study undertaken off-campus or describing students who studied away from the physical campus. They originated at the University of London in the late 1800s in relation to students who were registered to take the examinations of the university at remote locations and who were not enrolled as students. It became a common term at universities in the UK and Australia during the 1960s.

Full-time Students

Students who are enrolled for more than half the usual study load.

Graduation Rate

The percentage of students in a cohort who enter at the beginning of a course/program (or transfer into a course/program) and then go on to graduate.

Non-completion /Non-completers

Students who do not complete all the units required for a course and do not re-enrol. Non-completers are the same as stop-outs as defined above.

Non-traditional students

Students, who because for some characteristic such as study mode, ethnic background, or age of entry, do not share the characteristics of the majority of the body of students.

On Campus Students

Students who are taking more than half the usual study load through units offered on campus.

Open Learning

Open learning is an imprecisely defined term often used synonymously with distance education and is a popular term in countries, such as the UK, where distance education is seen as an alternative to a mainstream system that has traditionally been closed and elitist. It is also used synonymously with *open education* a term which emphasises systems where institutions allow students to enter/be admitted regardless of their educational background.

Part-time Students

Students who are enrolled for half or less the usual study load and who are studying on-campus.

Remote Students

For this study remote students were defined as those students who maintain a residential address more than 30 kilometres from a campus of the university and who are enrolled in any mode other than full-time internal.

Retention Rate

The retention rate is the percentage of a cohort of students enrolled in a program who will graduate or are still enrolled.

Program

Program is used here in the American sense of a series of units study comprising the work required for a degree, often in a pattern or sequence. It is synonymous with 'course' in Australian and British terminology. At the university where the research was conducted, programs of study leading to a degree are called courses rather than programs.

Student Attrition

Student attrition is the phenomenon of students enrolling in a program, completing one or more units and then failing to re-enrol and complete the program. The opposite of attrition is retention. Sometimes the term is used in relations to single units/course rather than programs. Attrition is often discussed in terms of the percentage of students not completing a program, eg 'attrition rate'.

Student Progress

Student Progress is a general term that includes any discussion or conceptualisation of student retention and student attrition.

Student Retention

Student retention is the phenomenon of students enrolling in a program, completing at least the minimum requirements, and either completing the program or being on track to complete the program. The opposite of student retention is student attrition. Sometimes the term is used in relations to single units/course rather than programs. Retention is often discussed in terms of the percentage of students completing a program, eg 'retention rate'.

Unit

A set of lectures, seminars, tutorials, lessons or practical sessions on a particular topic and the associated assessment, usually studied over one semester or term. In the North American literature, 'course' is normally used for this concept.

Chapter One

INTRODUCTION AND BACKGROUND

This initial chapter will provide an introduction to the aims, purposes and framework of this study, give some background to contemporary issues in the field of distance education and introduce the problems of attrition and retention in distance education. The chapter is divided into five parts: the *Aims and Purpose of this Study*, *Research Perspective and Framework for this Study*, *Distance Education* (a background), *Distance Education and Student Attrition*, the *Magnitude of Student Attrition in Distance Education*, the *Benefits of Student Retention*, and the

I. AIM AND PURPOSE OF THIS STUDY

Studying at a distance is characterised by two seemingly conflicting tenets. First, a higher attrition rate for students studying at a distance has been a characteristic since this option for study began to be offered by higher education institutions. Despite the hopes attached to technological developments such as email, video-conferencing and increasingly sophisticated software for online course provision, attrition remains significantly higher among distance students compared to internal, full-time students (Smith, Ferguson & Caris, 2002). Secondly, there is a widely held belief that the results/outcomes for remote students (at least for those who complete their courses) are as good as those studying conventionally. Long's

(1994) results confirm previous findings that distance education students are more likely than on-campus students to withdraw, but that their academic achievement was comparable in later years, although marginally lower in the first year (see also McCaffrey, 1989; Sweet, 1986).

While there are possible reasons that high attrition yet comparable results could exist alongside, the findings are sufficiently problematic and unresolved to give cause for further investigating the phenomenon of attrition in higher education. Student persistence and retention in higher education generally, has been the subject of discussion and research for many years and in distance education has been seen as an issue for some decades (Phipps & Merisotis, 1999). Unfortunately the phenomenon has seemingly been as difficult to understand theoretically as it has been to ameliorate at a practical level (Keegan, 1996).

The attrition process for distance students is certainly complex, both in the number of potential variables involved, and in the number of perspectives from which it can be, and has been, approached. Several conceptual models of the attrition process in distance education have been developed (Berge & Huang, 2004). Most have, so far, concentrated on a particular perspective—sociological (Bank, Biddle & Slavings, 1992), psychological (Braxton, 2000), organisational (Sarkar, 1993) or economic (Tillman, 2002). In the few cases where the various perspectives have been combined, the aspect has been either static, concentrating on the entry characteristics of students, or has concentrated only on the dynamic process in play while the student is studying. None it would seem, except a study by Kember (1995)¹, has attempted to combine all these perspectives and aspects of the problem.

¹ Much of Kember's early work in the mid 1980s, upon which his 1995 study was based, was undertaken at an antecedent institution of the one where this current study was conducted—the University of Tasmania.

Kember's model of student success in distance education (1995) was generally well received when published, but in the intervening 12 years has been subject to critique (Woodley, de Lange & Tanewski, 2001). Since Kember's 1995 study, there have been several other important contributions to the field (such as Parker, 1999b; Frankola, 2001; Diaz, 2002; McEwen & Gueldenzoph, 2003; Martinez, 2003; Wang, et al 2003; Rossett & Schafer, 2003; Berge & Huang, 2004; Simpson, 2004). These, together with the many significant changes in course delivery and technologies make it timely to review Kember's work and revisit some of his contentions, assumptions, and conclusions. The aim and purpose of this study, therefore, was to complete a comprehensive review of the literature related to student persistence in distance education, develop a new integrated model based on both static and dynamic aspects of attrition, test this new integrated model through a survey based panel study, and compare the results where possible to a previous study undertaken at an antecedent institution twenty years ago (Osborne, Kilpatrick, & Kember, 1987).

After conducting a focus group, completing the literature review, and formulating a new model of student progress in distance education, a number of research questions became evident. These were:

- What were the general characteristics of the students in the study?
- Did the factors in the model developed for the study correlate to student persistence, and does the new model have any predictive capability?
- What were the principle reasons for withdrawal (from the student's perspective)?

- To what extent did the reasons given by students for withdrawal diverge from those given by students 20 years ago?
- What generalisations can be made about the character and experience of studying by distance education today?
- Are there any differences between the attrition of students studying principally online, versus those in mainly traditional correspondence (print-based) courses.

These questions were used as the guide for the progress of the research and as a basis for the structure of this thesis.

The thesis is comprised of this introduction and background (chapter 1), and chapter summarising the literature review (chapter 2). Thereafter follows a chapter detailing previous models of student progress, particularly student progress in distance education and the process by which the new model of student progress used in this study was developed (chapter 3). It was thought that a chapter dedicated to this topic was necessary as the new model was seen as an important and novel aspect of the research. The chapters following include a description of the research methodologies used and an account of the research methods and practices undertaken during the study (chapter 4), a summary of the research results (chapter 5), an analysis of those results (chapter 6) and the conclusions derived from the content and analysis of the research (chapter 7).

II. RESEARCH PERSPECTIVE AND FRAMEWORK FOR THIS STUDY

This research was conducted using a pragmatic approach (Cresswell, 2008) with the aim of solving some of the problems of attrition through a better understanding of the process emphasising the student's perspective. An additional, but significant, aim of the study was to better characterise the

contemporary distance education experience particularly in relation to the impact of online learning and its effect on retention.

Pragmatism is a framework conceived by the educationalist John Dewey and is a different perspective from other educational research frameworks in that it allows for an understanding of knowledge as a function of, and for, human action (Biesta & Burbules, 2003, pp 105-114). It is, in other words, an understanding of human interaction and communication in thoroughly practical terms. The pragmatist's point of view sees knowledge as providing possibilities for refining and supporting day-to-day problem solving (Creswell, 2002, pp 11-12).

Pragmatism also informs the view of theory and practice in education. The pragmatist perspective is not that research is theoretical and practice practical and that educational practice is the field of applying the findings of educational research. Rather, both are viewed as practices in their own right with different possibilities and limitations, each informing the other. The relationship between the two is therefore one of cooperation and coordination rather than application. Therefore, in this thesis for example, it is not supposed that the development and testing of a new model of student progress in distance education will necessarily provide any directly applicable outcome such as a program, practice or instrument. However, it is hoped that by providing a new conceptual framework, distance education practice may be informed and improved.

Perhaps most importantly, Pragmatism, rejects any notion of rigid objectivism. The pragmatic approach denies an unbridgeable gap between mind and knowledge or matter and action. However, for pragmatic researchers the alternative to objectivism is not relativism but inter-

subjectivity. Dewey defined inter-subjectivity as the shared, adjusted common perspectives and actions that individuals adopt when they act together to achieve a common goal. (Biesta and Burbules, 2003). The complexity of the factors and processes involved in retention and attrition in education, especially distance education, is so complex that it would be folly to assert an aim to distill objective conclusions from research on the topic. Rather, this research will aim to make contributions that assist in bringing about shared, more widely accepted, perspectives in the area.

Pragmatic research is not restricted to means, techniques and instruments but also of ends, purposes and values. For Dewey, undertaking educational research was not only about what is possible or achievable but also to question whether what is possible or achievable is *desirable*, especially is it desirable from an educational perspective. For pragmatists, a socially constructed practice such as education depends on the unpredictable ways in which individuals relate to one another. Therefore, two principal tenets follow: every educational situation is unique and any educational environment will not stay stable over time (Biesta & Burbules, 2003). In line with this thinking, a mixed methodology has been chosen for this research. The methodology, set out in chapter 4, includes a variety of approaches that allow for the richness and variety of students' experiences to be captured and analysed.

From a pragmatic perspective, educational research provides improvements in educational practice through the provision of new intellectual and practical resources for the day-to-day problem solving by educators, and by way of research outcomes that enable educators to approach problems in an intelligent way. It is hoped that this study will do just that—enable educators to approach distance education and its concomitant problems with increased

knowledge and foresight, and perhaps provide some practical suggestions for helping students to 'stay the course'.

III. DISTANCE EDUCATION

"Distance education is beset with a remarkable paradox - it has asserted its existence, but it cannot define itself." (Shale, 1988, p 25).

How to define or differentiate distance education from other modes of education has been the subject of much debate. According to Garrison (1987) distance education was "inexorably linked to the technology" whereas Shale (1988, p. 25) felt that the distance education's unique dialectical relationship between teacher and student is the fundamental principle in the distance education process and "distance" (and the technology which accompanies it) was an incidental consideration and not a "defining criterion". Barker, Frisbie and Patrick (1989, p. 23) argued for a broader definition of distance education and suggested that there is really two forms of distance education. The first is the traditional correspondence-based distance education where the emphasis is on independent study and the second is telecommunications-based distance education which offers the teaching and learning experience simultaneously. Garrison and Shale (1987, pp 10-11) came together to define distance education with a minimum set of criteria that allows a degree of flexibility. They suggested that distance education:

- implies that the majority of educational communication between teacher and student occurs non contiguously and involves two-way communication between teacher and student for the purpose of facilitating and supporting the educational process
- uses technology to mediate the necessary two-way communication.

Whatever the definition, it is without doubt that distance education is well established as an educational practice, even if it has not always been well accepted. Correspondence education, the earliest version of distance education, developed in the mid-nineteenth century. In 1840, an English educator, Sir Isaac Pitman, taught shorthand by mail. The University of London established its external programme in 1858 thereby offering the first opportunity to earn a degree by independent study.²

In the United States, in 1873, Anna Ticknow established a society with the objective of supplying educational opportunities to women of all social classes to study at home. Based in Boston, Ticknow's organisation used volunteers to deliver instruction to more than 10,000 students over the course of 24 years (Nasseh, 1997). Communication, teaching and learning all took place through printed materials sent through the mail.

In 1883, Cornell University attempted to establish a correspondence school but met with little success (Gerrity, 1976). Five years later, in 1888, New York State authorised Chautauqua College of Liberal Arts to grant academic degrees to students who successfully completed work at summer schools and by correspondence during the academic year (Watkins, 1991). Also, in the same year, Yale University authorised William Rainey Harper, professor of Hebrew, to grant degrees to students who completed correspondence study. In 1885, Harper wrote 'the day is coming when the work done by correspondence will be greater in amount than that done in the classrooms of our academics and colleges; when the students who shall recite by correspondence will far outnumber those who make oral recitations' (Harper, 1885, p 225). In 1890, Harper was appointed president of the newly founded

² University of London External Programme website:
<http://www.londonexternal.ac.uk/150/history/index.shtml> (Accessed 5/7/2008).

University of Chicago and made the Home Study Department one of the pillars of the new university (Noble, 2002).

Following the lead of Chicago, other American institutions started offering distance courses. By 1919, seventy-three colleges and universities were offering instruction by correspondence.

During the 1920s and 1930s a number of universities in the British Commonwealth started providing external tuition by correspondence. However, the adoption of such methods was by no means systematic and was seen as a device improvised to meet unusual circumstances, such as the necessity for administrators and teachers in the far flung corners of the empire to be given the opportunity to gain a degree (Bolton, 1986).

In the years between the World Wars the United States government granted radio broadcasting licenses to 202 colleges, universities, and school boards. Instructional radio enjoyed a brief period of interest, but by 1940 there was only one tertiary level course offered by radio and that failed to attract any enrolments and was discontinued (Atkins, 1991).

During the 1950s, despite the efforts of proponents of the mode, correspondence study struggled to gain acceptance. Indeed, any acceptance it had gained prior to World War II seemed to slip away and correspondence study began to be seen as suspect by many academics and students (Wright, 1991). However, during this period, some quality research helped to counterbalance the prevailing mood. Childs (1949) first examined the effectiveness of correspondence study with encouraging results, and then initiated a project to study the application of television instruction in combination with correspondence study (Ford Foundation, 1956). Childs

concluded ‘...television instruction is not a method. Television is an instrument by means of which instruction can be transmitted from one place to another’ (Almenda, 1988, p 68). Childs also found no appreciable differences in regular classrooms by means of television, or by a combination of correspondence study and television (Almenda, 1988).

The first higher education institutions specialising in distance education emerged in the 1950s. These were in South Africa (the University of South Africa), Russia (the Moscow Pedagogical Institute for Correspondence Studies) and Scandinavia (the Norwegian Knowledge Institute [inter alia]). In these countries there were compelling environmental factors for these innovations as well as a certain freedom from entrenched traditional perspectives (Bolton 1986).

In the 1960s and 1970s the escalating costs of traditional education, the advent of a more mobile population, and the growth of career-oriented goals and expectations led to a renewed interest in distance education in the English speaking countries. In the United States, in 1963, the Federal Communication Commission reserved selected transmission frequencies for educational instruction—which became known as the Instructional TV Fixed Service (ITFS)³, and in 1967 the Corporation of Public Broadcasting was established⁴. Perhaps one of the most significant advances in distance education of the last century occurred in 1969, when the Open University was established as a degree-granting institution in the UK. The Open University used a

³ Federal Communication Commission, *Report and Order and Notice of Proposed Rulemaking*. Available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-135A1.pdf. Accessed 1 July 2008.

⁴ About CPB. Available at: <http://www.cpb.org/aboutpb/act/>. Accessed 1 July, 2008.

combination of TV courses and correspondence methods in an innovative modular format.⁵

The Open University has played a major role in the development of research in distance learning, producing many publications in the field and establishing a major research centre—the Institute of Educational Technology. As a large, innovative and successful educational organization, the Open University has boosted the respect for, and confidence in, correspondence programs around the world, and it continually refreshes thinking on the future of distance learning. The Open University also paved the way for the development of open universities in other countries such as Japan, Netherlands, Israel and the USA, largely by taking a lead in the large-scale application of technology to facilitate distance learning (Zigerell, 1984).

In Australia, no doubt because of the remoteness of much of the population, distance education was used to educate school students from a comparatively early date. New South Wales, Queensland and Victoria all had some form of correspondence schooling in place by the early 1900s. By 1931 it was estimated that 1.5% of Australian primary and secondary students studied by correspondence (Stacey, 2005). Cunningham (1931, p 9) wrote that ‘Australia can claim to be the first country that has shown in a systematic way, and on a large scale, that it is possible to provide by correspondence a complete elementary education for children who have never been to school.’ In regional Australia, many schools were small and remote. Consequently teaching qualifications began to be offered to teachers by distance education, at first through the University of Queensland (1910) and then, additionally, through a number of teachers’ colleges located in the mainland states. Indeed, the

⁵ History of the Open University. <http://www.open.ac.uk/about/ou/p3.shtml>

demand from teachers is considered by many to have driven the establishment of 'external studies' departments at Australian institutions of higher education (Stacey, 2005).

During Australia's post war population expansion in the 1940s and 50s, a number of vocational colleges and new Universities were established in regional areas. By the 1970s many of these were offering degree level distance courses. The demand for part-time and distance courses was heightened by the decision of the 1972-75 Labor government to abolish higher education fees. In the 1970s many vocational colleges became 'colleges of advanced education' with degree awarding powers and began offering a wider range of distance courses to students who, either because of their remote location or because of their family and employment circumstances, preferred this mode, (Guiton, 1977). In 1974 a Universities Commission report rejected the establishment of a single-mode distance education university similar to the UK's Open University. Instead, it was recommended that Australia adopt a dual mode model, with each state having at least one major existing institution offering external degrees (Guiton, 1977).

By 1975 there were over 17,000 external students enrolled in distance education courses in Australia, which at the time was around 6% of total enrolments (Holmes, 1977). By 1982, the distance education sector was the fastest growing in higher education and accounted for 334,000 enrolments. At this time, 43 higher education institutions offered external courses (Johnson, 1983). The 1986 Hudson Report recommended the reduction in duplication of distance education courses by reducing the number of providers to just six. A new Labor government in 1987 implemented the recommendation and six (later increased to eight) Distance Education Centres (DECs) were approved for funding (Hobbs, 1988). While the decision was not without controversy, it

was widely held to have led to an increase in the quality of distance courses, because it provided specific funding for distance courses and fostered increased collaboration among providers. However, another review in 1993 led to the DEC system being abandoned, and since then, all institutions have been free to offer courses in whatever mode they choose (Stacey, 2005).

The Australian federal government now funds innovative projects to develop improved technological support for distance courses on the proviso that innovations are shared collaboratively (despite encouraging competition among the Universities at the same time) in its Framework for Open Learning Programme⁶. Collaboration is also fostered by national associations of universities offering distance education. Perhaps the most important of these, the Australasian Council on Open, Distance and E-Learning (ACODE) had its origin as the representative body for the eight Distance Education Centres but now has 43 Australian and New Zealand tertiary institutions as full members.

A number of reports on the effectiveness and best practices in distance education technology have been produced in the last fifteen years (National Board of Employment, Education and Training 1992, 1994; Taylor, Lopez and Quadrelli 1996; Yetton 1997). Also, since 1992, Australian Universities have been subject to quality audits at the federal government level. The audits have also examined, and provided oversight for, the quality of distance education programs offered by Australian institutions.⁷

⁶ DEEWR Framework for Open Learning Programme. Available at: http://www.dest.gov.au/sectors/school_education/programmes_funding/programme_categories/online_learning/framework_for_open_learning_programme.htm. (Accessed 1 July 2008).

⁷ Department of Education, Employment and Workplace Relations, *Improving Quality in Australia's Higher Education- The last three decades*: available at: http://www.dest.gov.au/sectors/higher_education/policy_issues_reviews/key_issues/assuring_quality_in_higher_education/improving_quality_in_australias_higher_education_the_last_3.htm (Accessed 6 July 2008).

IV. DISTANCE EDUCATION AND STUDENT ATTRITION

Concern over student attrition (defined as the number of students who fail to re-enrol) has been a constant issue in countries with a significant fee paying higher education sector, such as the United States. In countries such as Australia and the United Kingdom it is more a recent phenomenon (Berger & Lyon, 2005). The interest in Australia has developed largely as a result of diminishing government assistance which in turn has placed pressure on institutions to produce greater efficiencies (Harding, 2001). This increased interest has so far focused largely on students 'lost' to the system (Tinto, 2005).

Traditional definitions of student attrition have focused on the number of students who start and finish their university program, but the growing heterogeneity of the contemporary student population is forcing a re-consideration of the issue. As increasing numbers of students choose a blended approach to learning (Cross, 1981); taking time out to raise a family, pausing when work demands preclude study and/or enter university in one program only to transfer to another program and/or institution at a later date, the traditional definitions are becoming of limited value to institutions interested in gaining insight into the influence that their policies may be having on their students. As a result a new definition based on attrition at the course/unit/subject rather than program/degree level has crept into the literature. In effect this is: the number of students beginning the course minus those completing the course (Diaz, 2002; Richardson, Morgan, & Woodley, 1999).

As with student attrition in face to face courses, attrition in distance education has also come under close observation (Thompson, 1997; Phipps & Merisotis,

1999; Smith, Ferguson & Caris, 2002). While distance education is by no means a recent phenomenon, so called 'industrialised distance education' has seen it become much more prevalent in the last two decades (Moore, 2007). Early delivery of distance education consisted of written information delivered in the mail. Distance education is now delivered using a much wider range of formats—combinations of written, audio and video formats offered via asynchronous/synchronous sessions are all possibilities. Indeed, the most common mode of delivery is now via the Internet (Frith & Kee, 2003; Ryan, Hodson-Carlton, & Ali, 1999). However, despite these new technologies, the recurrent downside of distance education—higher attrition than face-to-face student attrition, remains a problem (Carnevale, 2002; Carr, 2000).

There is no single accepted factor thought to be the cause of higher attrition rates for distance education (Gibson & Graff, 1992; Grace & Smith, 2001; Morgan & Tam, 1999), but many have proposed that distance education requires a reconceptualisation of traditional methods of teaching and learning. A widespread view is that successful distance education courses require a more student-centered, facilitative-interactive pedagogy than is common in traditional face-to-face education (Gallie & Joubert, 2004; Palloff & Pratt, 2001). Another strand of thought revolves around the concept of 'transactional distance'. The theory of transactional distance was put forward by Moore (1972), who postulated that 'distance education is not simply a geographic separation of learners and teachers, but, more importantly, is a pedagogical concept' (Keegan, 1993, p 22.).

Transactional distance describes the teacher-learner relationships that exist when learners and instructors are separated by space and/or by time. These relationships form a typology characterised by the structure of instructional

programs, the interaction between learners and teachers, and the nature and degree of self-directedness of the learner. The concept of 'transaction' in education is derived from Dewey (Dewey & Bentley 1949) and connotes the interplay among the environment, the individuals and the patterns of behaviours in a situation (Boyd & Apps, 1980). In distance education there is a significant but variable psychological and communication space to be traversed for teachers and learners. The physical and psychological separation gives potential for misunderstanding between the inputs of instructor and those of the learner. It has been pointed out that in any educational program, even in face-to-face education, there is some transactional distance (Rumble 1986). Some theorists have argued therefore that attrition in distance education can largely be attributed to a failure to bridge this transactional distance (Garland, 1993; Gunawardena & Zittle, 1997; Morgan & Tam, 1999; Leh, 2001)

If one accepts the proposition of transactional distance being influential in student learning, then the separation of teacher and learner is sufficiently significant that special teaching-learning strategies and techniques are required to both stimulate and to retain the student's engagement. Theories relating specifically to online learning have developed in accordance with this thinking. Garrison, Anderson, and Archer (2004) believe that successful online learning occurs when a community of inquiry reflecting a social, cognitive and teaching presence is constructed. Quinsee and Hurst (2005), view the crucial element of education as being dialogue, therefore the communication tools inherent in many of the Internet-based distance education course management systems (e.g., Blackboard and Moodle) must be constructed in a way that they are appropriate tools for achieving effective learning events. While there is currently a dearth of research into online learning styles and corresponding design requirements (Koc, 2005), some have proposed that the tendency towards 'shovelware' or the direct copying of classroom based

material onto the Internet (White, Roberts, & Brannan, 2003) has a deleterious effect on student satisfaction and is implicated in high attrition rates in distance education (Gallie, 2005).

V. THE MAGNITUDE OF ATTRITION IN DISTANCE EDUCATION

Some researchers have reported student attrition in distance education delivery as high as 80% (Diaz, 2002; Flood, 2002). Such an extreme figure is probably far from the average, but is perhaps an indication of what can happen in programs that are poorly designed or supported. However, the magnitude of attrition in distance education generally has been a concern since the inception of the mode. In 1971, a review of correspondence courses in the United Kingdom identified that drop-out was much higher than for full-time courses, and could in some instances reach 70%. This calculation was based on figures from the *better institutions*⁸ who were willing to provide statistics (Glatter & Wedell, 1971). By the 1980s several of the dedicated institutions of distance learning had been in operation long enough for recognisable patterns of attrition to emerge. Shale reported in 1982 that the completion rates for Athabasca University in Canada averaged only 28.8% (although this rose to 58.2% if non-starters were excluded). At the Universidad Nacional Abierta of Venezuela the dropout rate was estimated at 79% (Rumble, 1982, p 199) and at the Sukhotai Thammathirat Open University of Thailand, 62% (Srisa-An, 1986). In the United Kingdom, Woodley (1987) projected a completion rate of just over 50% for students registered at the Open University, although he noted that up to 28% of applicants did not complete the registration process (it was also noted that as the Open University conducted an open entry policy [that is, no prior educational qualifications are required] entrants on average are more diverse

⁸ Glatter and Wedell's terminology in Glatter and Wedell (1971).

and have a lower standard of education than entrants to traditional universities. Open entry policies no doubt contribute to an institution's or program's attrition rate, and as many distance institutions also have an open entry policy it can be difficult to separate the underlying causes of attrition). Many of these institutions have, however, improved their completion rates since these initial studies. For instance, the completion rate (for Bachelor's degrees) at the Open University in the United Kingdom was more recently calculated to be as high as 60% (Simpson, 2004).

Australian research certainly confirms that there is a propensity for students studying at a distance to drop out. A longitudinal study by Urban (1999) of students initially enrolled in 1992 and whose progress was tracked until 1997, showed that almost 67% of full-time on-campus students and 47% of part-time on-campus students completed a course by 1997. However, only around 37% of external students completed an award by the end of 1997. The differences in completing an award can be explained, in part, by the fact that part-time and external students were more than twice as likely than full-time students to be still studying in 1997. But, over 44% of part-time students and almost 53% of external students had not completed and were no longer enrolled in the institution in 1992.

The results from regression analysis in Urban's (1999) study indicated that mode of study had a significant effect on completion rates and that the outcome for each mode of study was significantly different to the other modes. Students in the 1992 cohort who studied full-time, irrespective of their basis of entry to university, had significantly higher completion rates than those who studied part-time or externally. Similarly, part-time students had significantly higher completion rates than those who studied externally. There was little difference between the crude and adjusted completion rates for

those students enrolled on the basis of a tertiary entrance score and studying full-time or part-time.

There was, however, a slight difference in the crude and the adjusted probability of completion for students admitted on the basis of a tertiary entrance score who studied externally (31% were likely to complete) compared with those who gained entry on some other basis (29% were likely to complete). The adjusted probabilities for external students suggested that women had a probability of completion of almost 27% while for men that was just over 32%. The adjusted results also indicated that for females admitted on the basis of a tertiary entrance score, full-time students complete at nearly three times the rate of external students. Full-time male students completed at twice the rate of external students (Urban, 1999).

A continuation of Urban's (1999) study by the Department of Education, Training and Youth Affairs (DETYA) spanning 1997-2001—but only for masters and doctoral students—found that full-time postgraduate students were significantly more likely to complete than part-time students. Indeed, the probability of full-time doctoral students completing was almost 21% higher than the probability of part-time students completing. For masters students the difference was less marked and full-time students had a probability of completion of only 6.6 % higher. External students had the lowest estimated probability of completion—around 38% for both the doctoral and masters students (DETYA, 2001).

The most recent update of the DETYA study (Martin, Maclachlan & Karmel, 2001) now includes an additional two years of data and an additional cohort of students who commenced in 1993. This study updated the earlier findings and tested the robustness of the model developed for the previous cohort

using the new cohort. The main findings were that in respect of the 1992 cohort of commencing students, 64% had completed an award at the same university by 1999 compared to 60% in the previous study, and the same trends in performance for the 1999 results compared to the 1997 results in terms of student characteristics continued to prevail. Those of interest included:

- Students who study full-time had higher completion rates (69.6%) than part-timers (53.2%) while external students had the lowest completion rates (44.0%); and for the 1993 cohort alone, students who studied full-time had higher completion rates (69.5%) than part-timers (52.1%) while external students had the lowest completion rates (39.5 %)
- Completion rates were highest for younger students and generally decline as age increased
- Students who were admitted on the basis of a tertiary entrance score had higher completion rates (66.9%) than those admitted on another basis (62.2%)
- Socio-economic status had an adverse effect on completions, with students who had a status of most disadvantaged having the lowest completion rates
- Urban students had higher completion rates (65.3%) than students living in rural (63.2%) and isolated areas (54.1%); and for the 1993 cohort alone, urban students had higher completion rates (63.7%) than students living in rural (61.6%) and isolated areas (54.8 %).

Therefore, it is evident that remoteness from a campus either through studying externally or residing in an isolated or rural location is a major impediment to the successful completion of a degree. However, it is not the purpose of this study to 'problematise' the field. Higher attrition is a characteristic of the mode of study, and it was hoped that by conducting this research and gaining a better understanding of the processes that led to this outcome, some knowledge or strategies that might assist in ameliorating attrition amongst distance education students would be produced.

VI. THE BENEFITS OF STUDENT RETENTION

Student retention, especially retention of students until the completion of some qualification or credential such as a degree or diploma, is broadly acknowledged as desirable. However, one can ask why completing 23 units of a 24 unit degree is a waste/loss or why the awarding of a degree is considered such a significant statement of human worth. These are difficult questions to answer especially in an objective manner. Harris (1987) summarised three main interpretations of the phenomenon; these were a cultural capital interpretation based on Parkin's (1974) closure theory, a functionalist interpretation based on Hopper's (1981) 'relative deprivation' theory and a conventional human capital interpretation.

The cultural capital argument for the benefit of student retention centres on a Weberian analysis of the processes involved in the consolidation efforts of social groups which strive to monopolise certain privileges and opportunities. According to Parkin (1974) such groups restrict access by members of other groups by demanding some particular attribute as a condition of entry. For certain groups, educational qualifications are a convenient, readily available and easily justifiable exclusionary criterion. The contemporary emphasis of the newer professions—teaching, nursing, accounting—on the acquisition of degrees could be seen as evidence of this process at work.

Hopper's (1981) functionalist argument revolves around the idea of feelings of 'relative deprivation' in individuals and groups. The status of a degree can alleviate these feelings. According to Hopper, these feelings of relative deprivation are triggered by 'blocking factors' in career and social progression. To overcome the blockages new levels of achievement, expectations and identification are required. The legitimate innovation or

mark of ascendancy is a new educational qualification. Hopper believed adult students who studied for degrees at the Open University (UK) were prime examples of individuals feeling relatively deprived and trying to overcome blocking factors in their lives.

The third interpretation of the desirability of students staying until their program of study is completed is the human capital argument. The human capital argument has wide currency in Australia and features prominently in many government reports (Borland, 2003). The remainder of this section will be a summary of the human capital argument from the perspective of the student, government and society, and educational institutions.

According to the human capital argument, having large numbers of students dropping out before completion is a waste of resources. Neither the individual student, government, society nor higher education institutions gain very much from a student partly completing a program. Most higher education programs are designed in a way that builds on basic precepts and leads to an outcome where students reach either a level of expertise in the discipline or a level sufficient to qualify them for entry to a profession. The concept of a 'graduate premium', that is the extra salary and benefits individuals derive from having a degree, has become controversial because of its use in the debate surrounding the funding of tertiary institutions and the extent to which students should contribute. However, while the extent to which society benefits from higher education is contentious, the benefit to the student is not (Marginson, 2004). Even though increasing numbers of people graduate from university each year, the graduate premium has remained almost static. What also seems clear is that completing 100% of a program has a significant advantage over completing 50%, 75% or even 99% — certainly students would not appear to derive 50% of the utility of a degree from

completing only 50% of their program. Indeed, in a recent study it was shown that the weekly pay, occupational status and work-satisfaction of university non-completers is generally substantially less than that of university course completers and comparable with people who had never enrolled in a university course (Marks, 2007).

Benefits to Students

Before the introduction of the Higher Education Contribution Scheme (HECS) in Australia it was estimated the private annual rate of return for a university degree (graduate premium) was around 20% (Borland, 2000). The most recent estimates indicate it still remains a good investment at around 14.5% pa. Attending full-time university costs the average student more than \$19,000 a year⁹. Up-front HECS fees account for about \$5000 of this cost, with such expenses as student union fees, books and travel costs adding a further \$2500. The greatest proportion of this cost is forgone income; allowing for an average student with a part-time job, students give up about \$11,500 a year in wages. However, in compensation, university graduates earn approximately \$12,800 on average a year more than people who leave education after Year 12. A three-year degree will have an initial cost averaging about \$60,000 (for the student) but led to increased after-tax earnings over the graduate's working life (39 years) of about \$498,000, yielding a net total lifetime gain of about \$438,000. In addition to these quantifiable financial benefits, the magnitude of private rates of return increases significantly once account is taken of the effect of having a university degree on the probability of employment. The rate of unemployment for graduates (bachelor's degree and higher) in 2006

⁹ There figures are based on a study by Borland (2003) and adjusted to the Australian CPI for 2004-2007.

was 2.2%, whereas the unemployment rate for those whose highest education level was Year 12 was 4.7%, and for those without Year 12—5.6%¹⁰.

The payment of HECS, study costs and loss of income, means that from an economic point of view, a student investing in higher education will be affected not only by the ultimate return on that investment but the possibility of losing their investment altogether through dropping out. Assuming a student who drops out before graduation does not qualify for the ‘graduate premium’, they will lose most, if not all of the money they have invested up to that point. In addition, many students who drop out will be drawn largely from educationally and economically disadvantaged sections of society, and may therefore have acquired a considerable debt without acquiring the means (the graduate premium) to pay it off.

In addition to these financial benefits of completing a degree, a series of UK studies (Feinstein, 2002) indicated that graduates are also more likely to be in high level positions using their university-acquired skills, and also have greater promotion prospects, therefore enjoying greater job quality and satisfaction. Graduates also tended to receive more training than non-graduates, and have greater flexibility in their work. For example, university graduates are twice as likely to work at home in their main job compared to those who have only completed high school. According to the same study, graduates enjoy better health outcomes, with 70-80 per cent more likely to report ‘excellent’ health, compared with a similar individual educated only to high school level.

¹⁰ Figures taken from Australian Bureau of Statistics website —table entitled ‘Unemployment Rate (A) by Highest Level Of Education’ page title: *4102.0 - Australian Social Trends, 2007*.

Benefits to the Government and Society

According to the human capital argument, governments have long-term financial interests in retention. In most western countries, governments invest significantly in higher education through grants, subsidies and student allowances. The return on that investment is achieved by increased income from increased income taxes returned from graduates, economic growth through the practice of higher skills in the workforce, and lower expenditure on health and welfare. While the 'graduate premium' continues to exist, then that premium will be taxed, and in Australia much of it will be taxed at the higher rate. If retention of all students in Australia was increased from 91% to 100% that would produce an extra 15,300 graduates a year earning a graduate premium of \$498,000. Over a working life of 39 years, the extra tax paid from all these students would be approximately \$78,000,000 a year. This is a return of around 12.5% per annum on the government's initial investment of \$40,500 per student¹¹ for a three- year degree. Of course, there are so many assumptions in this figure that it is difficult to see it as anything other than a vague estimate. And, of course, the retention of just distance students would make up only a small proportion of this extra revenue, but as the return per capita is probably better for distance students (they still pay tax while studying and start re-paying HECS sooner), there is still an undeniable benefit to the government in improving retention in this sector.

The benefits to the economy through having more graduates in the workforce is also difficult to quantify. An Access Economics study (2005) argued that increasing post-Year 12 retention rates from 80% to 100% (TAFE and

¹¹ Figures from the *Group of Eight Backgrounder, Number 1, October 2007* (available at: http://www.go8.edu.au/policy/papers/2007/Go8_Backgrounder_No_Oct_2007.pdf) indicate the total Australian commonwealth government funding of \$13,500 per student (total minus amount paid in

university) would lift GDP by up to 1.1%. This increased productivity would result from higher value-adding from more advanced technology and information based industries. A highly educated workforce also produces benefits as there is generally less worker turnover, and industry can adapt more quickly to threats from overseas competitors and to technology and workplace changes.

It has been suggested that better-educated people not only make lower demands on society in terms of health and social welfare needs but also contribute more in the form of voluntary services (Feinstein, Duckworth and Sabates, 2008). While this is difficult to quantify, there are clear financial gains to government through lower expenditure.

A graduate education also has beneficial inter-generational effects. Graduate families (defined as families where at least one parent is educated to degree level) are more engaged with their children's education and their children are subsequently more successful at school. The same study shows that graduates are more likely to engage actively in their communities. Male graduates are over 3.5 times more likely to be a member of a voluntary organisation than someone educated to Year 10 or below, and graduates are significantly more likely to demonstrate a critical awareness of political issues, and are significantly more likely to have a positive attitude towards diversity and equal opportunities compared with similar individuals educated to Year 10 or below (Feinstein, Duckworth and Sabates, 2004).

HECS paid by the student). This amount multiplied by three gives \$40,500. Funding of longer degrees would obviously be more.

Benefits to Institutions

Student retention is an important matter for any university; there are many reasons why institutions ought to increase retention rates. First, high attrition rates have financial implications. For example, recruitment costs are significant in the current era where universities compete for students. These recruitment costs are partially wasted if students are not retained. Obviously, there is also the loss of future fee and other income, and a high attrition rate may impact upon other sources of funding, such as government grants. High attrition rates for particular courses can jeopardise their continuation and the positions of the staff running them. This wastes establishment and staff recruitment costs and can force institutions to inappropriately re-deploy staff where they are under-utilised or unproductive. In severe cases where many programs have high attrition rates, institutional viability may even be questioned.

A less tangible, but perhaps just as important benefit of student retention is reputation. While students who have a good experience and graduates have a positive influence on the institution's reputation, students who leave without completing their course may not have such good stories to tell. It is an accepted maxim in any area of client service that the 'bad' stories tend to have greater impact than the good ones. If enough students feel aggrieved because they have not graduated due to poor institutional factors, this could easily harm the institution's reputation and therefore influence future recruitment. In addition to these market oriented arguments, an argument that a university's ethical and duty of care obligations to its students can still be made. Offering a place to an individual indicates some degree of belief that the person has the potential to succeed. Therefore, an assumed contract between the university and the student arises, where the student is expected

to obey the rules and study earnestly, and the university will attempt to provide the best possible study environment for students (Pelikan, 1992).

Universities generally accept that some students, especially those from disadvantaged backgrounds or studying externally, will need additional resources to succeed. Providing those resources can be seen as an investment rather than an impost. The financial benefits accruing to a higher education institution as a result of increasing student retention will depend on the particular funding characteristics for that institution, but the potential is illustrated by a number of recently reported programs. In the first, Mager (2003) used a predictive modelling process to identify new students most at risk of dropping out at Ohio State University. A team of ‘tele-counsellors’ then phoned those at-risk students whilst maintaining a control group of similar students who were not contacted. Mager estimated that this resulted in an increase in retention of 4% (at an overall cost in wages, phone charges and other costs of US\$345,000) which brought in additional tuition revenue of around US\$2.25m. This gave a return on investment of around 650% or a profit to the institution of US\$1.9m.

Simpson (2004b), undertook a similar telephone mentoring exercise at the Open University (UK) during the period 2001–03. Simpson used a logarithmic regression analysis of previous students’ personal characteristics and subsequent withdrawal rates (the main factors in the analysis were previous educational qualifications, sex, and age) to identify new students vulnerable to withdrawal. He listed students in reverse order of their predicted probability of success based on the analysis (ranging from 9% to 83% probability of passing). He then, chose students alternately to be either in the test group or the control group. Simpson found there was an average 4.5% increase in student retention amongst the experimental group over the control

group (n=3500) over the three years of the study. The cost of contacting student was around £10 per head. Each student was estimated to bring in an income of around £1100 in UK Government grants and a saving of around £200 on re-recruitment costs. The return in investment of the exercise was estimated to be around 450%, and if applied to all the Open University's 33,000 new students each year, the annual net surplus was estimated to be £1.2m.

Chapter Two

LITERATURE REVIEW

This review of the literature is divided into four main sections. The first, *Distance Education Theory*, gives a summary of the major fundamental theoretical principles and schools of thought in the field. The second, *Student Progress in Higher Education* provides background to study in higher education emphasising the phenomenon of attrition and retention. While most of the research reviewed in this section does not deal with distance education students, much of the work in Distance Education is based on these previous, more general studies. The third section, *Student Progress in Distance Education* is rather more specific and includes an overview of the research as well as a sub-section detailing a longitudinal study undertaken in the 1980s at the University of Tasmania. The fourth section concentrates on studies into interaction and communication in distance education, a relative expansive sub-branch of the field. The final section includes a summary of the limited, but quickly expanding, corpus of research on online learning and its effect on student progress.

I. DISTANCE EDUCATION THEORY

Keegan (1986) suggested that the theoretician has to answer three questions before developing a theory of distance education. The three questions are:

- Is distance education an educational activity?
- Is distance education a form of conventional education?
- Is distance education possible, or is it a contradiction in terms?

In answering the first question, Keegan stated that while distance education institutions possess some of the characteristics of businesses rather than of traditional schools, their educational activities are dominant, so distance education is an educational activity—though a more industrialised form of education—and the theoretical bases for distance education should be seen as being within general education theory.

In answer to the second question, Keegan (1986) stated that because distance education is not based on interpersonal communication and is characterised by a mass pre-production of material it is a distinct form of education. Therefore, while the theoretical basis for distance education can be found within general education theory, it cannot be found within the theoretical structures of oral, group-based education (although this view was soon countered by Shale (1988) who put forward the view that all the essential elements that constitute the educational process when teacher and student are able to meet face-to-face also are the same when teacher and student are physically separated).

In answer to the third question Keegan (1986) pointed out that if education requires inter-subjectivity—a shared experience in which teacher and learner are united by a common purpose (Dewey, 1949)—then distance education is a contradiction in terms. For Keegan, distance instruction was possible, but distance education was not. Central to Keegan's concept of distance education was the separation of teaching acts in time and place from learning acts. Successful distance *education*, he believed, required the reintegration of the two acts. Keegan suggested that an emphasis on making learning experiences equivalent for learners would contribute to the reunification of teaching and learning as simultaneously occurring acts. This proposition has, not surprisingly, been challenged by a number of commentators since the advent

of virtual systems in distance education (Simonson, Schlosser & Hanson, 1999). However, Keegan (1995) stated that virtual systems based on teaching face-to-face at a distance constituted a new field of study. He indicated that a theoretical analysis of virtual education still needs to be addressed.

Keegan (1995) reaffirmed the continued need for a firmly based theory of distance education. For Keegan, theory would provide a touchstone against which financial, educational, and social decisions and policies could be made with confidence, rather than as ad hoc responses to a set of conditions arising in crisis situations, a method of problem-solving, according to Keegan, that has so far been a characteristic of the field.

Keegan (1995) also classified theories of distance education into three main groups: theories of independence and autonomy, theories of industrialisation of teaching, and theories of interaction and communication. Keegan included a fourth category that comprises theories that seek to explain distance education through a synthesis of existing theories of communication and diffusion as well as philosophies of education. The same method of classification will be used to discuss the major theories in the following four sub-sections.

Theories of Independence and Autonomy

Wedemeyer's Theory of Independent Study

Wedemeyer (1971) considered the independence of the student as the essence of distance education. This was reflected in his preference for the term *independent study* for distance education at the tertiary level. Wedemeyer attempted to identify the characteristics and advantages of independent study – perhaps the most important of which was ‘a democratic social ideal’

(Wedemeyer 1971, p 549) of not denying anybody the opportunity to learn. For Wedemeyer, other important principles of independent study, consistent with equity and access, was *self-directed learning* and *self-regulation*, that is, learning is under the geographical and temporal control of the learner.

Wedemeyer was critical of contemporary methods used in higher education, believing outdated concepts of teaching and learning were being used. He lamented that institutions and educators were not utilising modern technologies that had the possibility to positively alter higher educational practices. Wedemeyer's ideas had their practical origins in the Articulated Instructional Media (AIM) project initiated by Wedemeyer in 1964, which 'proposed that a unique system be developed for a new type of institution...made possible through course design utilizing media and technology and...supported by counselling and resource and learning centres' (Sherow and Wedemeyer, 1990, p. 18).

In addition, Wedemeyer believed there are four common elements of every teaching-learning situation: a teacher, a learner or learners, a communications system or mode, and something to be taught or learned. He proposed a reorganisation of these elements that would accommodate special separation and allow for independence for the learner. Wedemeyer believed that, despite there being physical separation, the development of the student-teacher relationship was possible, and indeed essential, to the success of distance education. He also identified defining characteristics such as: communication, pacing, convenience and self-determination of goals and activities. He was an advocate of freedom and choice for the learner. However, most significantly, Wedemeyer (1971) also noted that independent study 'courses offer less freedom in goal determination and activity selection' (p. 551). He precipitated a persistent debate in the literature by critiquing the

then current (and probably continuing) practice of not individualising or personalising independent study courses. He urged educators not to let the course, through common practice or complacency, determine or prescribe goals and activities. In this regard, Wedemeyer lamented that ‘the seeming rigidity of the format and materials apparently deters teachers and students from more completely exercising their respective options’ (p. 551). He insisted that the ‘independent study method is not, in its basic concepts, different from other teaching-learning methods’ (p. 553).

Wedemeyer suggested that independent study had a number of common characteristics, namely: the student and teacher are separated, the normal processes of teaching and learning are carried out in writing or through some other medium, teaching is individualised, learning takes place through the student's activity, learning is made convenient for the student in the student's own environment, the learner takes responsibility for the pace of learning—with freedom to start and stop at any time (Simonson, Schlosser & Hanson, 1999).

Wedemeyer proposed that to break the ‘space-time barriers’ of education teaching had to be separated from learning. For this to happen successfully, Wedemeyer argued that systems of distance education should include ten characteristics which emphasise learner independence and the adoption of technology as a way of implementing it. According to Wedemeyer, distance education systems should:

- Be capable of operating at any location where there are students (even only one student) and not require the presence of teachers at the same place, at the same time;
- Place the majority of responsibility for learning on the student;

- Free academic staff from custodial-type duties so that more time can be given to truly educational tasks;
- Offer students and adults wider choices (more opportunities) in courses, formats, and methodologies;
- Use, as appropriate, all the teaching media and methods proven effective;
- Mix and combine media and methods so that each subject or unit within a subject is taught in the best way known;
- Cause the redesign and development of courses to fit into an articulated media program;
- Preserve and enhance opportunities for adaptation to individual differences;
- Evaluate student achievement simply, not by raising barriers regarding the place, rate, method, or sequence of student study; and
- Permit students to start, stop, and learn at their own pace

(Wedemeyer, 1971).

Moore's Theory of Independent Study

In his *Two Dimensional Theory of Independent Study*, published in 1972, Michael Moore made one of the first attempts to conceptualise distance education as a field of study. Moore also expressed a concern that the progress of distance education was being hindered by lack of attention to 'macro factors' and argued that there was a need to describe and define the field of distance education, to discriminate between its various components, and to identify the critical elements of the various forms of learning and teaching. Moore worked at the Open University (UK) and his ideas are largely shaped by his experience there.

The *two dimensions* in his theory were (i) Structure – how responsive the educational program is to the learner's individual need, and (ii) Dialogue – the extent to which the learner and teacher are able to respond to each other. According to Moore, a course high in structure, such as a lecture-only course, will generally be low in dialogue and consequently transactional distance will be high. A course high in dialogue, such as a one-on-one Socratic approach, will have low structure with a resulting low transactional distance.

Regarding distance education, Moore postulated that distance courses too, had these two dimensions which can be measured. He also stated that it was conceivable that a distance education course could have a provision for two-way communication (dialogue) and be responsive to the needs of the individual learner (unstructured)—and such a course would have low transactional distance despite being conducted ‘at a distance’. Conversely, a course that was highly structured and lacked opportunities for dialogue would have a high transactional distance, whether or not the course was conducted through distance education.

Moore argued that, while for technical and economic reasons distance education courses were highly structured, the adverse effect of this restriction could be ameliorated by ensuring there were opportunities for dialogue between teacher and student. This opportunity for dialogue would reduce the transactional distance. Certainly, the role of dialogue in decreasing transactional distance has been confirmed in a number of studies (Bischoff, Bisconer, Kooker, & Woods, 1996; Chen, 2001; Saba & Shearer, 1994; Stein, Wanstreet, Calvin, Overtom, & Wheaton, 2005). Moore’s theory also formed the basis for research in a number of studies on learner-teacher interaction such as those by Harasim (1987, 1995) whose research on on-line graduate courses in education indicated that increased dialogue in distance courses reduced students’ perceptions of transactional distance and increased student

satisfaction; and that of Hiltz (1994) who studied the efficacy of a virtual classroom in a quasi-experiment.

Moore (1980) addressed learner autonomy in the second part of his theory. He noted that in traditional educational settings, learners are very dependent on teachers for guidance and in most programs the teacher is active while the student is passive. Moore reasoned that, in distance education, as there is a gap between teacher and student, the student must accept a high degree of responsibility for the learning process. Some students are autonomous learners who need little help from the teacher, so the teacher takes on more a role of respondent than director. However, some adult learners are non-autonomous and require help in formulating their learning objectives, identifying sources of information, and measuring objectives. Distance education courses can be designed with an assumption or requirement that students were autonomous or non-autonomous, and Moore initially formulated his theory with the intention of classifying different types of education programs, as *autonomous* (learner-determined) or *non-autonomous* (teacher-determined). To classify a program, one required the answers to the following questions:

- Is the selection of learning objectives in the program the responsibility of the learner or the teacher (i.e. is there autonomy in setting objectives)?
- Is the selection and use of resources the decision of the learner or the teacher (i.e. is there autonomy in methods of study)?
- Are the decisions about the method of evaluation and criteria to be used made by the learner or the teacher (i.e. is there autonomy in evaluation)?

According to Moore, by categorising a program, one gains an insight into how that program functions (Simonson, Schlosser & Hanson, 1999).

Moore's theory was further developed and tested by Saba and Shearer (1994). Saba and Shearer also developed the diagrammatic conceptualisation of the theory in *figure 2.1*.

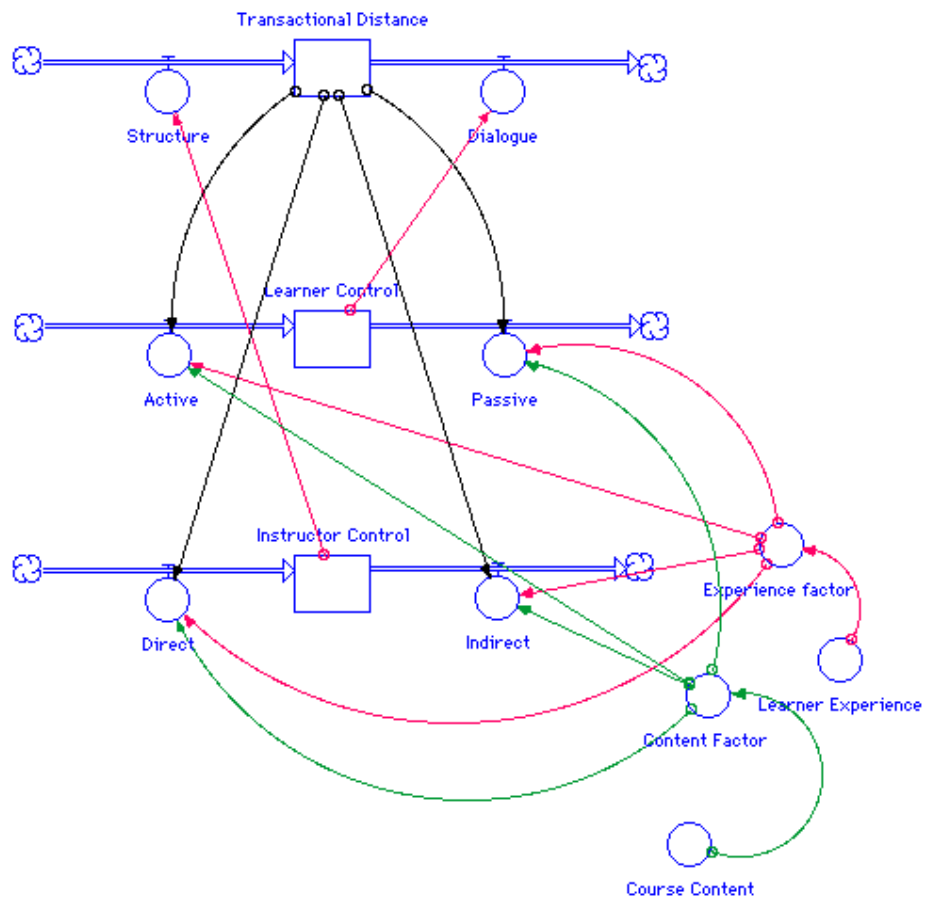


Figure 2.1 Moore's Theory of Independent Study (As conceptualised by Saba and Shearer, 1994)

Theories of Industrialisation of Teaching

In his model, conceived in the mid 1960s, Peters analysed the structure of distance education and noted the possibility of adopting industrial production techniques such as a division of labor, mass production, and organisation to realise economies of scale and reduce costs (Peters, 1994a). Peters considered that the structural constraints in distance education and its reliance on self-instructional print packages meant that this type of education was open to industrial approaches. While it can be said that the industrial model has been very influential in distance education, it was not a theory of teaching or of learning, but rather a clearly articulated way of thinking about the organisation of distance education. Peters's ideas had a considerable influence on the creation and early operation of the Open University (UK), and continue to have significance in distance education.

After examining a corpus of research that included an extensive analysis of the European distance teaching organisations, Peters (1965) proposed that distance education could be analysed by comparison with the industrial production of goods. Peters considered that from many points of view, conventional education that was oral, group-based and took place in a formal setting was a pre-industrial form of education. Therefore, distance teaching could not have existed before the industrial era and is a product of the industrialisation process. Drawing on economic and industrial theory, Peters concluded that the principle of division of labor is a critical element for the effectiveness of distance teaching. In his theory, Peters, stated that the teaching process has been gradually restructured and 'industrialised' through increased mechanisation and automation. Peters (1988) original precepts in his industrialised teaching theory included:

- The production process in distance study courses is as important as the preparatory work that takes place prior to production;
- The effectiveness of the teaching process is particularly dependent on planning and organisation. Organisation makes it possible for students to receive predetermined instructional units at appointed times. The use of methodical measures reduce the required amount of input of power, time, and money with each iteration of the process;
- Courses must be formalised and expectations from students standardised. In distance education, all the points in the cycle must be determined exactly;
- In distance education most teaching functions are objectified, that is the subjective element that had previously been a feature of academic teaching is lost in the production process to a considerable degree;
- The function of university teachers changes considerably when delivery moves from conventional teaching to distance education. The conventional role of lecturer is divided into three new roles: study unit author, distributor and marker;
- Successful and economic mass production of distance education requires a concentration of the available resources and a centralised administration. There has been a trend toward large-scale operations in higher education because demand for higher education outstrips supply and large providers are more economic and efficient.

These original precepts, which were dominated by structural and organisational factors, resulted in a zero sum situation—one had to choose between independence and interaction as inherent trade-off. This idea has been acknowledged as somewhat obsolete by the advent of computer mediated communication (CMC) by Peters.

Soon after, Peters (2000) offered a new structure for university education which included three basic forms of academic learning: self-learning, tele-learning and social intercourse. His argument was that communications

technology and lifelong learning demands will precipitate a “transformation of the traditional university into an institution of self-study and distance teaching” (Peters, 2000, p 20). From Peters’s perspective, self-learning and tele-learning are very much autonomous approaches to learning, and he clearly remains an advocate for independent, self-study—although enhanced with social intercourse defined in a non-formal and individually controlled manner. While Peters includes a recognition of interaction, there is still a strong identification with the ideal of independence consistent with his industrial model. For Peters, face-to-face discussion “can only be reproduced in part, and indeed in a reduced form, by mediated means” (p 17). Also, his concept of *social intercourse* seems to indicate a general social presence among learners rather than any specific academic communication (Garrison, 2000).

Theories of Interaction and Communication

One of the most important theorists with regard to interaction and communication in distance education is Holmberg. His (1989) theory of distance education practice centred on the concept of ‘guided didactic conversation’. This term referred to both real and simulated conversations, but in the context of distance education is most likely to be a simulated conversation. Holmberg argued that guided didactic conversation is a pervasive characteristic of distance education, and distance education requires a ‘friendly conversation’ fostered by well-developed self-instructional materials that result in feelings of a personal relation between the learning and teaching parties. Holmberg said it was the responsibility of course developers to create this simulated conversation through well-written materials that promote intellectual pleasure and study motivation. At the same time, Holmberg acknowledged that regardless of how expertly the course pack is produced, the conversation concentrates almost exclusively on

essential tasks required to complete the course, and real conversation with the tutor is necessarily supplementary to the course pack.

Holmberg's ideas are particularly relevant to the question of completion and retention in distance education, as intellectual pleasure and study motivation are considered a per-requisite to the attainment of study goals and the use of proper study processes and methods (Smith & Smith, 2006). Although *conversation* was the defining characteristic in Holmberg's theory of distance education, the theory was directed to the pre-produced course packs and could therefore be said to fall within the industrialised teaching paradigm as well.

Later, Holmberg (1995) suggested that distance education has been characterised by a trial and error approach, with little consideration given to a theoretical basis for decision-making, and that the theoretical underpinnings of distance education are fragile. He argued that most efforts in this field have been practical or mechanical and have concentrated on the logistics of the enterprise rather than any systematic ordering of ideas with an over-arching logical structure of reasoned suppositions. As a result, Holmberg significantly broadened his theory of distance education. This more comprehensive theory is divided into a number of parts encompassing the previous 'guided didactic conversation' ideas and the belief that distance education serves diverse, individual learners who cannot or do not want to make use of face-to-face teaching. According to Holmberg, distance education had a number of advantages over traditional campus based courses. These included, the promotion of students' independence and freedom of choice and the provision of social benefits by giving opportunities for both liberal study and professional and occupational training to a broader population

than conventional education. For Holmberg, distance education was an instrument for recurrent and lifelong learning and for inexpensive access to learning opportunities, and therefore equity in education. Holmberg's expanded theory was characterised by the following statements:

- All learning concerned with the acquisition of cognitive knowledge and cognitive skills, as well as affective learning and some psychomotor learning, is effectively provided for by distance education.
- Distance education is based on learning as an individual activity. Learning is guided and supported by non-contiguous means.
- Distance education is open to behaviourist, cognitive, constructivist, and other modes of learning.
- Personal relations, study pleasure, and empathy between students and those supporting them (tutors, counsellors) are central to learning in distance education. Feelings of empathy and belonging promote students' motivation to learn, influencing learning favourably.
- While it is an effective mode of training, distance education runs the risk of leading to mere fact learning and reproduction of accepted 'truths'. However, it can be organised and carried out in such a way that students are encouraged to search, criticise, and identify positions of their own. (Holmberg, 1995).

Some, such as Peters (1998), have argued that Holmberg's expanded theory represents little more than a thoughtful description of distance education while others (such as Simonson, M., Schlosser, C., & Hanson, D., 1991) argue that it is a profound theory from which hypotheses can be generated and that it has explanatory power by identifying approaches favorable to learning and to teaching methods conducive to learning. However, there is broad agreement that, despite Holmberg's effort to place teaching at the core of his theory, the structural and technological assumptions and the central role of self-study learning packages in his theory, raise questions regarding the

currency and contemporary applicability of his thinking (Simonson, Schlosser & Hanson, 1999).

Since Holmberg, some theorists have argued that the teacher role does not now need to be simulated only by way of written instructions and commentary, and adhering to such an approach might constrain and limit the possibilities for real conversation and a fully transactional perspective. One of these detractors was Garrison (1989). Garrison explicitly placed sustained, real two-way communication at the core of the educational experience, regardless of any separation of teacher and student. Garrison believed that mediated communication was a defining characteristic of distance education and an important design concern. He believed that this framework did not redefine the essential nature of the teaching-learning transaction.

Garrison and Shale (1990) stated that they wished to avoid the restrictive trap of describing distance education based upon its existing forms and structures. Rather, they preferred to focus on the functional basis of education first, by placing the teaching and learning transaction at the core of distance education practice. They saw this as a way of breaking loose from the organisational assumptions of the industrial model. Garrison's and Shale's model of the educational transaction at a distance placed the concept of control at the centre of the transaction. Control was defined as the opportunity and ability to influence the educational transaction. This was intended to replace the concept of independence (or self-study).

Garrison and Shale (1990) saw the idea of 'shared control' as the best way to describe the transactional nature of an educational experience in distance education. To them, two-way communication was central to control and at

variance with independence, so concentrating on independence had the effect of reducing the legitimate and worthwhile role of the teacher and, thereby, risked isolation of the student.

In addition, Garrison and Shale's control model indicated that independence necessitated by structural constraints was only one set of variables to be considered in a complex educational transaction. The macro elements of teacher, student and content need to be adjusted to give the appropriate balance of control depending on the micro level transactional elements of proficiency (ability and motivation), support (human and non-human resources), and independence (opportunity to choose) (Garrison & Shale, 1990).

Garrison, Anderson and Archer (2000) studied the issue of learning in a text-based environment in the context of CMC. Their theoretical analysis concluded that face-to-face interaction cannot be reproduced in whole within a text-based environment, no matter how interactive. For them, the communication characteristics were very different and, therefore, the nature of the educational experience would be altered. However, Garrison, Anderson and Archer argued that a text-based environment may not necessarily detract from communication, but might have an inherent communications advantage in supporting critical discourse in a community of inquiry at the university level. While their results were inconclusive, the research indicated the importance of studying emerging issues, such as the characteristics of spoken and written communication in mediated and non-mediated environments, for the development of theory. Garrison continues to argue that distance education practitioners need to fully understand the use of mediated communication for educational purposes (Garrison & Anderson, 2003).

Syntheses of Existing Theories

Perraton's Theory of Distance Education

Perraton (1988) composed a theory of distance education from elements of existing theories of communication, the diffusion of ideas, and elements from several philosophies of adult learning. Perraton's theory is contained in fourteen statements or hypotheses. The fourteen statements are categorised into three groups, maximisation of education through distance learning, the requirement of dialogue in distance learning and distance learning methods. The statements are reproduced below.

Maximising Education through Distance Learning

- You can use any medium to teach anything.
- Distance teaching can break the integuments of fixed staffing ratios that limit the expansion of education when teacher and student are in the same place at the same time.
- There are circumstances under which distance teaching can be cheaper than orthodox education, whether measured in terms of audience reached or of learning.
- The economies achievable by distance education are functions of the level of education, size of audience, choice of media, and sophistication of production.
- Distance teaching can reach audiences not reached by ordinary means.

Dialogue in Distance Learning

- It is possible to organise distance teaching in such a way that there is dialog.
- When a tutor meets distance students face-to-face, the tutor's role changes from that of communicator of information to facilitator of learning.

- Group discussion is an effective method of distance learning to bring relevant information to the group.
- In most communities there are resources that can be used to support distance learning to its educational and economic advantage.

Distance Learning Methods

- A multimedia program is likely to be more effective than one which relies on a single medium.
- A systems approach is helpful in planning distance education.
- Feedback is a necessary part of a distance learning system.
- To be effective, distance teaching materials should ensure that a student undertakes frequent and regular activities over and above reading, watching, or listening.
- In choosing between media, the key decision on which the rest depend concerns the use of face-to-face learning.

(Perraton, 1988)

Perraton's theory has been used as a basis for a knowledge building theory by Scardamalia and Bereiter (1994) and has been used by Bannan-Ritland, Bragg and Collins (2001) to produce an organizational framework to assist web course developers and instructors in the design, development and implementation of theoretically-based constructs in teaching and learning activities for web based courses.

Henri's Framework for Distance Educators

Another synthetic approach was taken by Henri (1992). Henri developed a framework aimed at helping distance educators understand the learning process and the facilitation of interaction for collaborative learning. Henri's analytical model consisted of five dimensions of the learning process –

participation, interaction, social, cognitive, and metacognitive. Henri's framework focused on educational and transactional issues from a psychosocial, transactional perspective in respect of teaching and learning facilitated through mediated communication. Henri took a collaborative view of teaching and learning and his analytical model provided a potential structure for coding CMC messages to study the nature and quality of the discourse.

Henri's framework was silent with regard to structural or distance constraints, and the five dimensions have been criticised as being inadequately defined (Garrison, 2000). Nevertheless, the framework has been widely-used as a coding scheme to determine whether online interactions are surface-level or deep, and whether the interactions were social, interactive, cognitive, or metacognitive in nature. Hara, Bonk and Angeli (2000) used it to analyse asynchronous discussions used to supplement a residential graduate level course and Newman, Johnson, Webb and Cochrane (1997), used it to compare evidence of critical thinking found in undergraduate face to face groups with asynchronous groups. Gunawardena, Lowe, and Anderson (1997) created an interaction analysis framework to examine the social construction of knowledge in collaborative learning environments facilitated by computer conferencing. Kanuka and Anderson (1998) applied this model to study asynchronous professional development interactions, and Anderson, Rourke, Garrison and Archer (2001) built on the work to create their 'practical inquiry' model.

Equivalency Theory

Equivalency theory, expounded initially by Simonson (1995, 1999), is built on the concept of equivalency of learning experiences between traditional classroom based delivery and distance delivery. The premise is that the more

equivalent the learning experiences of distant learners to those of local learners, the more equivalent will be the outcomes of the educational experiences. This approach to distance education advocates designing a collection of equivalent learning experiences for distant and local learners, even though the actual delivery of the experiences are may be different for each student. For Simonson, this meant the objective of instructional designers of distance education courses is to provide for appropriate, equivalent learning experiences for each student. This theory is based on the following definition of distance education as,

‘...formal, institutionally-based educational activities where the learner and teacher are separated from one another, and where two-way interactive telecommunication systems are used to synchronously and asynchronously connect them for the sharing of video, voice, and data-based instruction’ (Simonson 1995).

In elaborating on this theory, Simonson (1999) stated that it should not be necessary for any group of learners to compensate for different, possibly lesser, instructional learning experiences. Rather, students should have learning experiences that have been tailored to the environment and situation in which they find themselves. Therefore, according to Simonson, those who develop distance education systems should strive for equivalency in the learning experiences of all students, regardless of how they would be linked to the resources or the instruction they require. Simonson identified several key elements in Equivalency Theory: equivalency, learning experiences, appropriate application, students, and outcomes.

Not surprisingly, Simonson said ‘equivalency’ was central to this theoretical approach. His view was that local and distant learners have fundamentally different environments in which to learn, and it the responsibility of the distance educator to design learning events that provide experiences with

equal value for learners. Simonson gives the example of a triangle and a square having the same area and so may be considered equivalent even though they are different geometrical shapes. In the same way, the experiences of the local learner and the distant learner should have equivalent value even though their experiences might be very different.

Simonson's concept of learning experience, which for him included anything that happens to the student to promote learning, including what is observed, felt, heard, or done, was an essential element in the theory. He supposed that different students in various locations, learning at different times, may require a different mix of learning experiences. According to Simonson, the goal of instructional planning is to make the sum of experiences for each learner equivalent, so instructional design procedures should attempt to anticipate and provide the collection of experiences that will be most suitable for each student or group of students. Simonson gave the example of library resources. If they are important to a course or unit, then library resources should be available—that is the educational equivalent of the resources of the library should be as readily available to the distant learner as they are to the local learner, whether electronically, through collaborative agreements with local libraries, or through the delivery of library resources to the distant student.

Another essential element in Simonson's theory was *appropriate application*. Simonson defined appropriate application as the idea that learning experiences should be suitable to the needs of the individual learner, the learning situation should be available to the individual learner, and the availability of learning experiences should be proper and timely. Appropriate application is therefore a requirement that the delivery of instructional ideas fit the expectations and facilities available to learners, whether they are

distant or local. Simonson gave the example of collaborative learning strategies not being appropriate when an individual learner is isolated—unless an equivalent, technology-based collaboration is arranged.

Simonson also believed students should be defined by their enrolment in a course, not by their location. Once students were enrolled in a learning activity, course or unit of instruction they should be treated all the same and the institution should ensure they all have the potential to gain the same learning outcomes.

Simonson defined the last element, *outcomes*, as those obvious, measurable, and significant changes that occur cognitively and effectively in learners because of their participation in the course or unit. Simonson stated that outcomes consist of at least two categories: those that are instructor determined and those determined by learners. For him, instructor-determined outcomes are usually stated as course goals and objectives and identify what learners should be able to accomplish after the learning experience that they could not accomplish prior to participating in it. Whereas, learner-determined outcomes are less specific, more personal, and relate to what the learner hopes to accomplish as a result of participation. According to Simonson, equivalent learner-determined outcomes are identified when students enrol in follow-up courses or apply newly learned skills to job or course situations.

For Simonson, equivalency was central to the widespread acceptance of distance education. He believed that if teachers, learners, and the public in general started to identify learning at a distance as the equivalent of what they consider to be traditional learning, then distance learning would become mainstream. Whereas if equivalency did not become the public perception, then distance education would continue to be a peripheral form of education.

The equivalency approach of Simonson was generally supported by Shale (1988), who argued that distance education is not a distinct field of education.

Keegan (1995) also supported this idea, stating that,

This new approach to distance education based on virtual classrooms requires a substantially different theory upon which to base practice than the traditional view of distance education as it has been practiced in the past. The study of virtual and electronic classrooms is an important and complex field, still in its beginnings, with a unique contribution to make to educational knowledge. (p 19)

It appears that the changing and diverse environment in which distance education is practiced has inhibited the development of a single theory upon which to base practice and research. Those that have been proposed, include 'classical' theories emphasising the notion that distance education is a fundamentally different form of education, for example those that emphasise independence and autonomy of the learner, industrialisation of teaching, and interaction and communication. More recent theories based on the capabilities of new interactive telecommunications-based audio and video systems suggest that distance education may not be a distinct field of education. These newer theories urge the importance of existing educational theory and the creation of equivalent experiences for the distant and local learner. Also, the early theories tended to have a preoccupation with organisational and structural constraints, but the theoretical development of the field seems to be progressing from organisational to transactional issues and assumptions. The debate will no doubt continue for some time, as it appears that distance education theory has yet to take account of the full range of possibilities made available by developments in the field of communications and information technology.

II. STUDENT PROGRESS IN HIGHER EDUCATION

One of the earliest conductors of systematic research in student progress in Higher Education was Tinto. Tinto (1975) developed a model attempting to explain attrition for traditional college students and was based on Durkheim's (1961) model of suicide. Durkheim indicated that factors contributing to a propensity to suicide included the degree to which one was integrated into a collective society, the degree to which one's personal values differed from those of the society and one's inadequate personal interaction with other members of that society. Tinto applied Durkheim's theory to his model of attrition, equating suicide to dropping out and society to the institution of higher education (an idea first put forward by Spady, 1970). He postulated that students would be more likely to drop out if they failed to integrate into the academic norms and social environment of the institution.

The Tinto model included taking into account such factors as the individual's family characteristics including socioeconomic status, parents' education, and parental levels of expectation and the relationship between parent and student. The individual student's background factors included; sex, high school grade performance, educational experiences prior to college, entry motivation and goal commitment, academic ability and personality characteristics and attitudes. Other factors included external impacts such as changes in employment and how this might affect a student's cost-benefit analysis of staying in higher education. Tinto's model differed from previous models as he viewed student progress as longitudinal, and a product of group interactions rather than of merely individual attributes. He thought that student background characteristics affect student interactions within the university environment, which in turn led to social and educational outcomes; and it is the assessment of these outcomes that influences the student's decision to withdraw or persist.

In brief, this theoretical model of dropout argues that the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experience in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which led to persistence and/or to varying forms of dropout (Tinto, 1975, p 94).

Tinto refined and added to his model of student attrition in a major work on the topic in 1993. However, the robustness of Tinto's model is reflected by the fact that even after nearly twenty years of testing and analysis it remains conceptually very similar to its original form when first published in 1975.

Tinto is not without critics, however. Nora (1987) applied Tinto's (1975) theory in a study involving 1786 students enrolled in one of three community colleges in Texas. This study was not entirely supportive of Tinto's theory. The major area where the results of Nora's study diverged from the model was that the relationship between social integration and retention was not adequately substantiated.

Using a series of Likert-scaled items, Pascarella and Terenzini (1980) devised five factor-analytic scales operationalising Tinto's (1975) integration and commitment constructs. They suggested that five factors have a direct effect on a student's decision to drop out. These were; peer group interactions, interactions with faculty, faculty concern for student development and teaching, academic and intellectual development, and institutional and goal commitments. Terenzini, Lorang, and Pascarella (1981) were later able to successfully replicate and employ these scales, concluding that they provide a reasonably stable predictor of student departure at the end of the freshman year. Subsequent research, on various different types of campuses, suggested that, although the scales yielded better results on residential campuses, the original scales provide a reliable basis on which to differentiate persisters and departures at the end of the first year (Pascarella & Chapman, 1983;

Pascarella, Duby, & Iverson, 1983).

Darkenwald and Valentine (1985), though not studying student progress, did investigate a closely related topic—deterrents to participation. They identified six factors related to non-participation in organised adult education courses among the adult population they surveyed. These factors included: lack of confidence, lack of course relevance, time constraints, low personal priority, cost, and personal problems. Similarly, Hayes (1988) administered a modified version of the same instrument to a group of adult basic education students and found five factors identified as deterrents: low self-confidence, social disapproval, situational barriers, negative attitude to classes, and low personal priority. These studies of deterrents utilised methodology and instrumentation similar to progress studies and there seems to be a degree of overlap between the major sets of factors that appear to impact upon participation in formal adult education and factors which are related to dropout

Bean and Metzner (1985, 1987) developed a model to explain the dropout of non-traditional students. Their study indicated that non-traditional students (for example mature-age or part-time students) were more affected by the external environment and less affected by social integration variables compared to traditional students. Bean and Metzner explained this by assuming that non-traditional students spent more time in the external environment, attended part-time and lived off-campus. As a result the researchers replaced social integration with external environment in their study. They also included factors to do with individual background such as age, study load, educational goals, high school performance, ethnicity and gender. Bean and Metzner's model included academic variables too, such as study hours, study skills, academic advising, absenteeism, major,

employment certainty, and course availability. These were all found to be a factor in non-traditional students dropping out. The 'intent to leave' factors in their study involved utility, satisfaction and goal commitments and stress. These were also found to be causes for non-traditional students to drop out. The major difference between Bean and Metzner's study and previous studies was that they included 'environmental variables' such as finances, hours of employment, outside encouragement, family responsibilities, and opportunities to transfer between institutions. The results of Bean and Metzner's study (1985) showed that environmental variables have an important direct effect on dropout for non-traditional students, while academic variables have a direct effect, but not one as significant.

A study by Yorke (1997) involving a substantial number of students in multiple institutions found many of Tinto's and Bean and Metzner's assumptions were correct. Also, as an increasing number of students could now be considered as 'non-traditional', their model could have wider application. Yorke contacted and surveyed students who had withdrawn from six higher education institutions in the Northwest of England. Three broad influences were dominant in the decision to leave:

- wrong choice of field of study;
- financial difficulty;
- dissatisfaction with aspects of the student experience.

In a further study, Yorke (1999) found six categories or factors that encapsulate the many, varied and complex reasons students give for withdrawal:

- poor quality of the student experience;
- inability to cope with the demands of the program;
- unhappiness with the social environment;

- wrong choice of program;
- matters relating to financial need; and
- dissatisfaction with aspects of institutional provision.

(Yorke, 1999, p 39)

Wylie (2004) proposed a new model of student attrition called the 'Theoretical Model of Non-Traditional Student Attrition'. Wylie criticised the Tinto and Bean models because the components or factors in the models tended to remain independent of each other without reference to the combined or interactive effect of student, institutional and other factors on persistence. Wylie thought that the causes for student dropout could be found in the interaction of various self-concepts with a student initiated process of reevaluation of course participation and subsequent disengagement by the student from their study commitment. Wylie's conceptual model was focused short-term and crisis specific events, and was designed to explain and test attrition specifically for the non-traditional mature-age and part-time student populations. Wylie attributed non-persistence to the disorder experienced by the student in academic and social self-worth (self-concepts) that inevitably led to a student initiated process of forming an intention to, or actually disengaging from the study commitment. Wylie called for further research to see if the incorporation of these processes resulted in a more accurate model of attrition/persistence.

In 2007, Lasibille and Gomez published the results of an eight year study ending in 2004 in which longitudinal data for 7000 students enrolled in short and long programs from one university in Spain was analysed. They found that academic preparedness was one of the major influences on student completion. They also found that older students and students who delay entry into higher education are more likely to drop out before graduating,

and they found that family characteristics were significant factors in explaining student drop out in long programs. None of their findings contradicted the predictions of the Tinto, or Bean and Metzner, models to any significant extent (Lasibille & Gomez, 2007).

III. STUDENT PROGRESS IN DISTANCE EDUCATION

While the progress of traditional students has been subjected to numerous enquiries over the last 30 years, the same cannot be said regarding student progress for students studying at a distance. Until the late 1980s researchers attempted to explain distance student progress by borrowing models developed for traditional students (Bernard & Amundsen, 1989; Sweet, 1986). As late as 1999, Phipps and Merisotis were able to suggest that one of the important issues regarding the effectiveness of distance learning that required further investigation and information was student attrition. Their report identified that in a number of studies there was evidence that a higher percentage of students participating in a distance learning course tended to withdraw before the course was completed compared to students in a conventional classroom. They believed the issue of research into student persistence was considered troubling not only because of the negative consequences associated with dropping out, but just as importantly, the fact that the research often excluded these discontinuing students - thereby tilting the student outcome findings toward those who were successful (Phipps & Merisotis, 1999).

One of the early conceptual frameworks for considering the problem of attrition and retention in distance education was that of Gatz (1985). Using a series of telephone interviews to gather data, she identified five factors as

important in understanding the attrition/retention process. These were:

- Significance of course to goal
- Appropriateness of the distance mode
- Feasibility of time
- Integration of interests and background
- Accommodation of learning style needs.

The results of Gatz's study suggested a strong commonality in the reasons for successful completion by students. Gatz also found that content relevancy was a strong motivator, and suggested that future studies involve students from particular study areas because comparisons between areas might yield useful results. She concluded that the 'significance of course to the students' goals was found to be of greatest significance in completion and attrition for the greatest number of students' (p. 210).

Based on a 1980 synthetic model study by Bean, Billings (1986) developed a model of nurses' progress in a correspondence course. In this panel study, Billings found that students who made the most progress in the course were those who:

- Expressed an initial intention to complete the course within three months
- Submitted the first lesson within 40 days
- Had higher entrance qualifications
- Received family support
- Had high educational goals, and
- Lived within a short distance of the campus.

Billings explained most of the variance in terms of intent variables and

suggested that attrition from correspondence courses is similar to the dropout process in other undergraduate programs.

Osborne, Kilpatrick and Kember (1987), then staff at the Tasmanian State Institute of Technology (an antecedent institution of the University of Tasmania at Launceston), conducted a project examining the reasons cited by students for their withdrawal from distance education courses. The courses in focus used multi-media study packages and also had tutorials and/or weekend schools. For four semesters, during the period 1983 to 1985, students who withdrew from a distance education course were sent a questionnaire. The questionnaire was designed to elicit from students reasons they thought contributed to their withdrawal. The questionnaire consisted of 40 statements to be answered using Likert scale responses and two open ended questions. It was discovered that students saw lack of time for study as a major reason for withdrawal. Approximately half the students cited unexpected changes in work or personal circumstances. Personal, family or work circumstances conflicting with study was also a common response. Interestingly, the researchers were sceptical about the weight given to these factors by the students, stating,

Full credence should not necessarily be given to these statements because of the assertions of attribution theory. Generally people take credit for their own success by explaining these successes due to their own personal endeavours. On the other hand failures are invariably attributed to factors beyond their control (Osborne, Kilpatrick, & Kember, 1987, p 13).

This work at the University of Tasmania formed the basis for a considerable body of work in the area of student success in distance education undertaken by Kember at several other institutions over the following decade (e.g. Kember, 1989; 1990, Kember et al., 1994a; 1994b).

In Australia, Kember's model was adapted by Roberts, Boynton, Buete & Dawson (1991) and used as the basis for a series of interviews with students studying externally at Charles Sturt University. Although the sample was small it concluded that Kember's model provided a useful theoretical underpinning for examining not only reasons for student withdrawal but also why they continue their studies.

Garland (1993) used an ethnographic approach (Spadley, 1979) to study student perceptions' of barriers to retention in distance education. She observed students in five tertiary academic courses in the natural resource sciences. Garland's study involved face-to-face, in-depth interviews with 30 persisting (those who wrote the final exam) and 17 withdrawal students. The study revealed a number of situational, institutional, dispositional, and epistemological problems that posed barriers to course completion. The variables were complex, and according to Garland, acted additively and synergistically and in a multitude of context-dependent ways to contribute to a withdrawal decision. A decision Garland described as being 'essentially idiosyncratic in nature' (Garland, 1993, p 197).

Garland (1993) identified barriers including situational problems stemming from a student's milieu, such as a lack of support from peers and family or time constraints resulting from a student's multiple roles as parent, spouse, and employee. She also identified such institutional barriers as cost, bureaucratic procedures, poor scheduling or pacing, problems with the tutorial assistance, and inappropriate instructional design. The dispositional problems she identified related to the student's psychological and sociological makeup and included stress, procrastination, adult pride, learning style, and weak self-confidence. The epistemological barriers (problems that reflected a lack of congruency between the student's cognitive and affective perceptions of knowledge and the nature of the knowledge presented in the content) included presenting material to students that was too scientific and technical,

too abstract and theoretical, not personally relevant, or that required extensive prerequisite knowledge. Garland thought that many situational, institutional, and epistemological problems were interactive with dispositional aspects; that is, their problematic nature depended on the student's attitudes, proclivities, temperament, personality, expectations, and styles (Garland, 1993). Despite Garland's finding that barriers to retention were largely idiosyncratic, her results did reinforce those of Entwistle and Ramsden (1983; 1981) who had found a link between students' approaches to study and retention.

Kember (1995) developed a longitudinal model of dropout from distance education based both on research in approaches to study (Entwistle and Ramsden, 1983; 1981) and on Tinto's (1975) work. The model evolved from the development of the Distance Education Student's Progress (DESP) inventory by Kember, Lai, Murphy, Siaw and Yuen (1992). The DESP was an attempt to describe, characterise and examine dropout in distance education as an aid for staff at the Hong Kong Polytechnic. Results of a quantitative test of DESP have been reported by Kember et al. (1991) and have been successfully replicated by Kember et al. (1994).

Kember's 1995 study identified factors that affected the dropout decision in distance education. Such factors included demographic characteristics (individual characteristics, family size, housing conditions, employment, salary and educational background), goal commitment and motivation, academic integration (such as interaction with instructor, feedback from the institution, personal contact with tutors) and social integration (including the degree to which a student can integrate study with his/her work, family and social life). These factors comprised the components of the model, which he said was aimed at adult students and focussed on the factors that affect a student's successful completion of a distance education program with particular focus on the extent to which students were able to integrate their

academic study with their other responsibilities. In his model, Kember identified two paths that a student may follow, one of success and the other of difficulty and failure. He believed that there were particular characteristics that can be identified at the beginning of their studies that can indicate which path that student will follow.

Kember (1995) tested the model of student progress in distance education courses developed from studies and experience at a number of institutions and over a number of years (including the University of Tasmania in 1986). The sample of the initial quantitative test comprised students from three programs; textiles and clothing, taxation and business administration. The programs ranged from certificate through to master's degree level. The populations of these programs were 540, 400, and 90 respectively. The DESP questionnaire was administered about five weeks after the start of each unit. The time was chosen as being early enough to obtain responses from students who eventually dropped out, yet late enough for students to have sufficient experience to respond meaningfully. The questionnaire was distributed to students either at tutorials or by email. Follow up letters were sent to non-respondents after the initial mailing to maximise the response rate.

Kember's questionnaire started with items relating to the enrolment characteristics, such as sex, age, years of working experience, salary, marital status, and highest qualification. The remainder of the questionnaire consisted of items forming the sub-scales of each of the other components of the model (*Figure 3.5*). Kember concluded that his model had a predictive value superior to previous models (the coefficient of determination for the model as a whole implied that 80% of the total variance of student persistence could be explained by variables in the model).

Independently of Kember, Fjortoft (1996) proposed a model of retention in a study which involved 395 students enrolled in a distance learning program for a graduate pharmacy degree. Five sets of variables hypothesised a relationship to attrition/retention in Fjortoft's study. These included; individual characteristics (age and gender), college experience (grades and level of satisfaction), intrinsic job satisfaction, ease with learning on one's own, and perceived benefit of the course. Fjortoft found that perceived benefits, age and level of ease with distance learning were significant factors related to students' retention in distance education courses.

Taking a different approach to most of these previous studies, McAllister (1998) explored the individual, social and institutional issues which arise for open learning students in an ethnographic study of 36 mature students at the Open University (UK). The study provided an insight into the complex interplay on the issues involved in the student's decision to withdraw. The study detailed an example of a student who initially gave 'pressures of time' as the reason for dropping out. However, once their situation was analysed it became apparent that it was an unfortunate spiral of events leading to the destruction of the students' self-esteem. McAllister concluded that despite the bureaucratic routine of the support structure being followed closely, appropriate, timely support, was often unable to reach the student or to address their needs at the human level.

At the Open University, Woodley, de Lange and Tanewski (2001) published the results of a study challenging Kember's claims that the DESP was a robust causal model of student progress in a distance learning mode. Woodley, de Lange and Tanewski surveyed Open University students who were at varying stages of a variety of programs. They used Kember's questionnaire modified slightly to take account of the Open University setting. The study concluded that several aspects of Kember's model needed development. According to the researchers, many of the sub-scales showed insufficient

internal consistency indicating that some of the individual items were perhaps not measuring the same concept. Woodley, de Lange and Tanewski felt that there was insufficient evidence to support Kember's view of social and academic integration as being linearly associated. They suggested instead, that Tinto's original model where they are separate and parallel (i.e. independent) might provide a better fit with the data, saying:

'...Kember made considerable changes to Tinto's model itself. The key change is that whereas Tinto saw social and academic integration and being separate and parallel (i.e. independent), Kember sees them a linearly associated. In the positive dimension social integration leads to academic integration whereas in its negative form external attribution produces academic incompatibility' (Woodley, De Lange & Tanewski, 2001, pp 127-128).

Not only did Woodley De Lange, and Tanewski find no reason to support this change, they also did not agree with Kember's addition of Grade Point Average (GPA) into the model. Woodley De Lange, and Tanewski suggest that it might be more accurate to view the process as a continual one of decision making based on the total forces acting on the individual at a given time (Woodley, de Lange & Tanewski, 2001). For them, adding GPA amounted to incorporating a factor that was itself a product of the process rather than one that was independent and predictive of it. However, this Open University study was not without its own shortcomings, readily acknowledged by the authors. The study was not longitudinal as implied by Kember's model, and the Open University's system of enrolment and record keeping constrained the study to a significant extent.

IV. INTERACTION AND COMMUNICATION IN DISTANCE EDUCATION

The structure and facilitation of interaction and communication have been matters of debate in distance education for some time, and it is generally

accepted that effective interaction between student and institution is a necessary requirement for student progress and retention (Holmberg, 1995; Moore 1972, 1980, 1989; Evans & Nation, 1989). A few commentators have questioned the necessity of more than minimal interaction, such as Taylor and White (1981) who suggested that cognitive objectives did not necessarily need any contact. Certainly, some institutions have been quite successful taking this approach. The University of London has been offering external degrees for almost 150 years and in that time have graduated large numbers of students. Up until very recently, the University of London offered no support or contact other than a copy of the syllabus and the notification of examination times and venues.¹²

However, communication and interaction has been a well researched topic in education. Scott and Wheelless (1977) give a comprehensive summary of the seminal research from the 1950s to the 1970s and McCroskey, Richmond and McCroskey (2002) summarise the more recent research in communication and interaction in traditional education. Indeed, the amount of work in traditional education is so great that it might be more useful to concentrate here on the work in the field of distance education, which is also reasonably well developed. The media used for distance education has been evolving rapidly over the last half century, and it is probably this dynamic environment that has prompted a considerable amount of theorising and investigation since the 1970s.

It appears to be widely accepted in distance education that collective affiliation between student and institution can be enhanced through effective and continuing interaction. Bååth (1980) made an extensive empirical

¹² A Brief History of the University of London, available at: <http://www.lon.ac.uk/history.html> (Accessed 1 June 2008).

investigation into postal two way communication in correspondence education. Bååth was particularly interested in the density of submitted assignments. It was found that in all courses, greater density of submissions and returns correlated with higher levels of students completing the course. The other important finding was that it was also possible to replace substantial numbers of assignment questions by self-assessment questions without any noticeable effect on students. Rekkedal (1983) found that by reducing the median turn-around time on assignments from 8.2 days to 5.6 days, course completion increased from 69% to 91%.

Williams and Chapanis (1976) compared face-to-face and telephone interaction and found that either medium was equally effective for tasks such as exchanging information, giving opinions and asking questions or solving problems. For tasks such as persuasion or establishing relationships, face-to-face contact was more effective. Flinck (1978) reported an experiment in which students received tutor initiated telephone calls. The majority of students receiving the calls expressed a positive reaction. It was also found that 61% of students introduced topics of a personal or social nature into the conversations. Rutter and Robinson (1981) conducted research into the effectiveness of tutorials at the Open University of the United Kingdom. They suggested that telephone tutorials were more task efficient but more formal and less spontaneous than face-to-face meetings.

In the formative years of the internet, universities formed the backbone of the network and it is not surprising that early internet technology such as email was used for interaction in distance education. The term *computer mediated communication* was coined, initially, to embrace the sort of learning delivered through such early computer media as interactive CD ROMS and email (Harasim & Johnson, 1986). Initial findings about the use of computer

mediated communication (CMC), were that more students responded to content, questions, and ideas, and the responses were longer and more complex than in a traditional classroom (Harasim, 1987). The number and variety of interactions often increased, since students were given the opportunity to respond to each other's comments and work, which allowed students to learn from each other and receive encouragement, and direction (Phillips, Santoro, & Kuehn, 1988).

Explanations and teacher comments also became more interactive (Romiszowski & Jost, 1989). Romiszowski and de Haas (1989) noted that there appeared to be increased potential for deeper learning in this medium. Mason (1988) observed that CMC promoted *self-direction* by encouraging greater learner autonomy. CMC was also thought to promote self-discipline and required students to take more responsibility for their own learning (Berge & Collins, 1995b). CMC was said to be an agent for active learning, and encouraged learners who are *self-directed* and take responsibility for their own learning (Peterson, Morrison, Cram & Misanchuk, 1996). Although Eastmond (1995) questioned whether properties of interactivity, collaboration, and reflection are inherent to CMC, he acknowledged that the medium played a strong role in determining learning strategies.

Bates (1995) identified a number of educational benefits derived from CMC, including academic discourse and collaboration; reflective writing, knowledge building; cross-cultural participation, and social integration. Dede (1996) asserted that virtual communities are a powerful means of enhancing distributed learning. But there were also thought to be problems associated with using CMC. One was the text-only nature of CMC. Mason (1988) thought that written communication is not a "soft option" and some students lack confidence in expressing their ideas in writing. Another of the potential problems that Mason identified was the diminished obligation to communicate when the student can choose to not respond or to not

participate. Romiszowski & Jost (1989) also pointed to the asynchronicity of CMC, which they said could foster procrastination, or in some cases, failure to respond altogether. They also noted that the discourse in CMC could be *multi-level*, in that several different topics may be in simultaneous discussion and also *multi-speed*. Other authors have said that text-only ambiguities, information overload, participation frequency, emotional absorption, limited symbolic representation, and the lack of social context cues were media-related challenges (Bates, 1995; Eastmond, 1995).

Walther and Burgoon (1992) discovered that while initial differences in relational communication between CMC and face-to-face may exist, these differences tend to be eliminated over time. In their study CMC participants developed impressions of their study partners gradually over a period of five weeks, showing a linear increase in impression development that closely approximated the level that face-to-face communicators achieved. Walther and Burgoon suggested that ‘the ways in which humans pursue these interpersonal functions are more robust than can be impeded for long by computer-mediation’ (Walther & Burgoon, 1992, p 80).

Gunawardena (1995) expanded the ideas of Short, Williams and Christie (1976), to develop a theory that can be used to explain the social context of telecommunications-based interaction called the *theory of social presence*. Social presence is defined as the degree to which a person is perceived as a real person in mediated communication (Gunawardena & Zittle, 1997). According to the authors, social presence is both a factor of the medium, as well as of the communicator and their presence in a sequence of interactions. They made a distinction between *social presence* as a subjective measure of the presence of others and *interactivity* the actual quality of a communication exchange. Interactivity is a quality that may be realised by some yet only observed by others. When it is realised, there is social presence (Gunawardena & Zittle, 1997).

Gunawardena & Zittle (1997) also asserted that a common conclusion that has come out of social presence studies is that the *immediacy* of the instructor is a good predictor of student affective learning across varied course content. They defined immediacy as a measure of the psychological distance that communicators put between themselves and the objects of their communication. According to Gunawardena and Zittle immediacy enhanced social presence and a person could convey immediacy nonverbally as well as verbally. A study by Kearney, Plax and Wendt-Wasco (1985) determined that immediacy was an effective predictor of student learning and that both people-type and task-type students were sensitive to instructor immediacy behaviours.

A study conducted by Boverie, Nagel, McGee, and Garcia (1998), which explored the relative importance of social presence as a predictor of student satisfaction, added evidence that instructor immediacy contributes to student satisfaction and learning in a distance learning context. Gunawardena (1994) argued that the level of *social presence* exhibited by participants in a computer-mediated environment is a critical factor in achievement. Gunawardena and Zittle concluded that social presence is a strong predictor of overall learner satisfaction in a computer-mediated conferencing environment (Gunawardena & Zittle, 1997).

Research on social presence and CMC has indicated that despite the low social bandwidth of the medium, users of computer networks are able to project their identities, whether real or pseudo, feel the presence of others online, and create communities with commonly agreed upon conventions and norms that bind them together in exploring issues of common interest (Gunawardena & Zittle, 1997, p.11).

Zirkin and Sumler (1995) observed that the greater the interactivity in distance delivery, the more favourably the instruction is perceived. They found, in a meta-review of research studies, that increased student interaction

resulted in increased learning as reflected by test performance, grades, and student satisfaction. They proposed that the key ingredients were: the immediacy of the instructor and the intellectual engagement of the student. Zirkin and Sumler concluded that interactivity is an essential factor in student achievement, whether in the classroom or through mediated instruction.

Fulford and Zhang (1993, 1995) examined learner perceptions of interaction in relation to their satisfaction in a distance education context. Three variables were studied: personal interaction, overall interaction, and satisfaction (Fulford & Zhang, 1993). The findings of this study indicated that the critical predictor of learner satisfaction is not personal interaction, but rather the perception of overall interaction or *vicarious interaction* that is observed but involves no direct and overt participation of the observing student (Zhang & Fulford, 1994). Student attitudes toward interaction were highly correlated with the overall level of interactivity as perceived by students (Fulford & Zhang, 1995). The impression of overall interaction accounted for three times as much variance in satisfaction as did the perception of personal interaction. Learners who perceived interaction to be high appeared to have more satisfaction with the instruction than learners who perceived interaction to be low (Fulford & Zhang, 1993, 1995). Students' assessment of overall interactivity was largely based upon vicarious participation, rather than individual involvement. In other words, learner perceptions did not accurately reflect the level of interaction that actually occurred. Without exception, observed overall participation was found to be more highly correlated with perceived interaction than with actual participation.

Zhang and Fulford (1995) also discovered that vicarious interaction consistently contributed more to a persons' assessment of overall interactivity than his or her own observable participation. These authors concluded that personal participation, in comparison with vicarious participation, has only a secondary and unstable role in shaping overall perception of interaction in a

teaching-learning context. They thought that while these findings did not discount the importance of individual, overt participatory behaviour, it showed that the greater affective benefit is not with the individual who exhibits the behaviour but with the individual who observes it. Lee and colleagues (1999) argued that vicarious learning may, at times, have even more benefit than that of being a participant. They concluded that when learners 'spectate', there is less of a cognitive load, allowing the learner to concentrate on the content and process of what is being said. The implication here was that an equal 'air time' approach to distance learning may be a misuse of technology and disservice to learning, because psychological interactivity is predominantly vicarious in nature.

Hillman (1999) conducted a study that compared patterns of interaction in face-to-face classes with classes taught via computer-mediated communication. They found that face-to-face instructors uttered 73% of the sentences, whereas in comparison, the instructors in the CMC classes generated only 49% of the communications. Furthermore, the interaction patterns in the CMC classes resembled discussion, whereas the patterns in the face-to-face classes resembled recitation. Hillman concluded that these results quantify both the importance and the expanded role of the learner in the CMC context.

Wagner (1998) emphasised the outcomes of interaction in CMC and argued that among these outcomes are *learner control*, *self-regulation* and *self-directedness*. Wagner thought that unfettered interaction with the instructor, other students and the course material, provided learners with the ability to manage the depth of study, range of content covered, time spent on a specific learning task and gave them a feeling of control. Wagner noted that:

Learner control and self-regulation deal with the ability of a learner to keep himself or herself 'on task,' to mediate the need for additional information to complete one's understanding of a new idea, and to recognise when the learning task has been completed (Wagner, p 419).

Wheeler (2006) saw social presence that was sufficiently effective for individuals to collaborate effectively through technology as a form of 'absent presence'. He thought effective social presence was an illusion created by the human mind's ability to manufacture feelings of connection and interaction, even when separated by distance. This illusion could be achieved through the hearing of vocal inflections, paraverbal utterances and ambient sounds and via textual cues and non-verbal devices such as emoticons and images. Accordingly, Wheeler thought visual communication, such as videoconferencing, offered one of the richest forms of social presence of all the telecommunication technologies. However, Wheeler also saw *organic* technology such as blogs and wikis as useful because they have the power to challenge perceptions and create environments that are discursive and constructive for distributed learners. Also, asynchronous threaded discussion groups or chat systems attached to the blogs could provide a dynamic and extended forum for discussion and debate, and so:

'such organic technologies have the potential to increase social presence capability for online learning needs and will no doubt become more important to the e-learning technology mix as time goes by' (Wheeler, p 374).

In summary, recent research indicates that it is important for social presence to be built into digital learning environments. Social presence can help students to maintain their focus, keep up their study impetus, and perhaps even diminish the likelihood of them leaving a course before completing. As it becomes easier for distance educators, instructional designers and program managers to incorporate social presence features into digital learning environments, there is the potential to increase the retention of students in distance education courses.

V. ONLINE LEARNING AND STUDENT PROGRESS

In the short time that learning management systems such as WebCT/Blackboard, Moodle and Sakai have been used for the delivery of online courses, a vast body of work has arisen concerning the student experience in an online learning environment. Much of the work so far consists of case studies along with some surveys of students attitudes to online learning. A few of these touch on the subject of student progress and attrition, although there appears to be very few causal or experimental studies on the subject. Some of the online learning models have some relevance to this study as it is safe to assume that factors which make a course accessible and effective from a pedagogical perspective might also have retention implications. The following review of case studies of online delivery is far from exhaustive but, the examples given have been used because there is a reasonable connection to the concept of student progress. The studies in this section also include a study by Kennedy (2001), who developed and tested an instrument to measure students' readiness to learn in an online environment.

In 1997 the University of Georgia (UGA) selected World Wide Web Course Tools (WebCT) to provide Web-based instructional resources for UGA. The number of WebCT courses quickly mushroomed to several hundred. Although no formal evaluation was undertaken, the faculty reported through routine feedback processes that student retention was about the same for WebCT instruction and regular classroom instruction. Additionally many academics reported increased levels of participation by students through the bulletin board and chat facilities. However, not all students were off campus and not all courses used WebCT to the same extent, so firm conclusions were difficult to reach (Gard & Ashley, 1998).

At Montclair State University, New Jersey, during the late 1990s high drop

out rates for a Latin course were identified as a major problem. A pilot project using WebCT was instituted in 2000 as an attempt to address this problem. An experienced WebCT designer took on the task of revamping the course materials for online delivery with emphasis on preparing students for a heavy work load and a course full of concepts new to many learners. The WebCT quiz facilities were used to replicate language drills. The attrition figures fell each semester after the introduction of WebCT. The main benefits were reported to have come from the way WebCT was able to show up potential problem students before it was too late, giving the instructor time to remedy the situation before the dropout decision was made (Hussein, 2001).

Terry (2001) undertook a study at West Texas A&M University focusing on enrolment and attrition rates for 15 graduate business courses offered on campus and over the internet during a three year period. The business disciplines covered included accounting, economics, finance, business statistics, computer information systems, management and marketing. All 15 courses were offered at least once in both the on-campus and internet-based formats during the study period, and the same lecturer taught each course, regardless of instruction mode. Every effort was made to provide consistent methods, procedures, and materials in both the traditional and internet based instruction formats. Learning materials, including textbook information, detailed lecture notes, and supporting articles, were distributed in class or posted on the course web site, depending on instruction mode. Although enrolment went up considerably once the online courses were offered, so too did the attrition rate in 13 of the 15 online courses.

Terry's (2001) data also showed that some business disciplines were more conducive to attracting and retaining students than others. For example, the accounting courses had higher online enrolment and attrition rates, but attrition rates in the two instruction modes were comparable. This contradicted initial thoughts that the detail-specific nature of accounting might make the courses unconvertible to the online format. The online

versions of the economics courses had higher enrolment and attrition rates than their classroom counterparts. The corporate finance course in the study had a substantially higher online enrolment and attrition rate than its classroom counterpart—the attrition rate for the course was an alarming 36%. Enrolment in the basic statistics course was slightly higher in the online mode, but enrolment in the advanced course was substantially higher in the campus mode. Attrition rates for the online statistics course were extremely high. The 43% attrition rate was higher than that of any other course in the study. The online course in Organisational Behaviour had a relatively high attrition rate with lower enrolment than its traditional counterpart.

However, in Terry's (2001) study, enrolment and attrition rates for the Computer Information Technology courses were not significantly different across instruction modes. The online attrition rate of 5% was well below the overall average of 21% for all the courses, perhaps an indication of both the familiarity of the students taking the course with information technology as well as an inherent compatibility of information systems with online delivery. Similarly, the enrolment and attrition rates for a course in strategic management was not significantly different across instruction modes. An obvious conclusion was that courses requiring extensive mathematics are difficult to convert to an Internet instruction format.

The overall results of Terry's study implied that online courses seem attractive to students, but suffer from higher attrition rates than traditional campus courses. Potential explanations for the higher attrition rates included students not being able to adjust to the self-paced approach in the virtual format, the rigor of study being more difficult than students anticipated, and a lack of student and faculty experience with the instruction mode (Terry 2001).

Court (2001) reported that the University of Oklahoma School of Industrial Engineering was having difficulty with getting non-traditional students (industrial engineering students with full-time jobs and other engineering majors without strong statistical backgrounds) to successfully complete a course in simulation. Prior to the Autumn semester of 1996, all non-traditional students taking the course had either dropped the course or were administratively withdrawn. In time for the Autumn semester, the simulation course was taken from a traditional, lecture-based delivery system and transferred to an online/web-based course delivery system.

During the Autumn semester of 1996, five non-traditional students successfully completed the course with reasonable grades. Two of these students went on to complete their master's thesis in simulation analysis. The components of the redesigned course included online tutorials, quizzes, chat rooms and e-mail for communication between the instructor and students and among the students, online lecture notes and assignments, online submission of assignments and exams, video clips of systems for data collection and analysis. Students had access to the course 24-hours a day, 7 days a week making absences from class have less consequences. Court commented that the learning curve was reduced when introducing new software to the classroom as it became an in-class activity (in the past, the learning software had been an out-of-class activity). As a result, a 50% reduction was reported to have taken place in the amount of time required to cover basic simulation language commands. It was also reported that team assignments improved, there was a 100% reduction in late assignments, and up to a 30% reduction in the amount of class time required to cover some topics. Most importantly, it was concluded, non-traditional students had been able to successfully complete the course for the first time (Court, 2001).

King (2001) examined the impact of student perceptions of distance education technology and self-regulated learning on student achievement in distance learning through administering a 42 item post- course questionnaire to the students. The study included 178 students spread across eight distance education courses in various disciplines.. He found that the students' perceptions of distance learning technology had value in both predicting their final course grade and in whether they would recommend the course to other students. However, in contrast, he found that self-regulated learning abilities were not statistically significant in the study.

Volery (2001) conducted an exploratory study into the success factors in online education at Curtin University. When it came to student characteristics Volery found that the most significant factor was previous experience with the course delivery software (in this case WebCT). All the other factors such as gender, having the internet at home, country of origin were not nearly as significant. This led Volery to suggest that WebCT orientation programs before the start of the academic year were possibly the most useful way an institution could prepare online students for success. Interestingly, Volery also found that the technical competence of the instructor was also a significant factor.

Gallie (2005), in a study at Central Queensland University, found evidence that increasing the amount of online interaction and the number of opportunities for student activity, discussion and feedback may have significant effects on student retention. While she admitted her research did not enable a determination of the exact course changes that most influenced student retention, the majority of survey respondents in her study (95%) said that periodic e-mails, the discussion board and time-limited lecture postings helped to keep them focused on completing the course. Experienced distance education students identified online student-lecturer and student-student

discussions on professional issues and prompt feedback/postings to be important in keeping them educationally invested in their course.

Dietz-Uhler, Fisher & Han (2007) reported on a project at Miami University to improve retention in online distance learning courses. They used *Quality Matters*, a research-based initiative which advocates the use of eight general review standards to review online courses. Dietz-Uhler, Fisher & Han claim they were able to improve retention to a creditable 95%. Through aligning the components of the course—learning objectives, assessment and measurement, resources and materials, learner engagement strategies, and course technology, they believed it was more likely that students would achieve the desired learning outcomes. By using *Quality Matters* they also had access to a peer review process for their online course which enabled them to access knowledge about successful strategies from external experts.

Maley (2008) argued that technical support was just as important as course design. Maley reported on an initiative at Drexel University whereby procedures and practices were adopted to facilitate the success and ‘technical comfort’ level of all persons involved in online programs. This was considered necessary because modern online students need to be capable of using a range of technologies and these technologies need to be reliable and available when required. At Maley’s institution, a technical coordinator position was created and their role was made integral to the development/delivery cycle of the courses. The technical coordinator served as a primary point of contact for technical questions/problems for both students and faculty and ensured the proper implementation of the procedures and practices. The role was also the liaison between the students/faculty and other technical support operations such as the institution general IT support and the dedicated Blackboard technical support team.

Maley, reported that the change brought measurable positive improvement in attitude to online learning programs and was showing positive effect on retention rates.

Thorpe (2008), drawing on her experience at the Open University (UK), urged educational developers and academic staff to document the design of online courses that deliver positive retention outcomes. Thorpe believed the documentation should be systemic and standardised and made widely available. For such documentation to be useful, she believed it needed to identify both the pedagogical strategy used and the way in which a sequence of structured tasks supported effective participation by students. Thorpe suggested using some software called *Compendium* in addition to a prose description of the changes. Thorpe believed this process of documenting the design of key stages in a successful course would help refine both the interpretation of research findings and their communication to practitioners. Thorpe reported that preliminary work on the analysis of mapped changes revealed that a sequence of carefully crafted online tasks, requiring students to engage first in content and intra-personal interaction, increased the quality of the online group collaboration. The mapping also revealed other important elements such as the quality of inputs in the form of detailed explanations in the online guides, the structure and nature of outputs that students were required to construct at various points, and the formats of assignments. According to Thorpe, the findings from the research had the potential to a different perspective from that of previous studies providing evidence about how CMC in general can play a productive role in supporting learning. By using Thorpe's methodology, evidence of how a combination of certain sequences of tasks and diverse forms of interaction in an online course can be assessed, duplicated and re-assessed over a number of disciplines and institutions.

SUMMARY

Distance education theory and practice has been subject to changes that, to a large extent, mirror changes in technology and society. Early theory concerning ‘correspondence education’ was formulated on the basis of the principal modes of communication being the printed word and the postal system. By the 1930s, industrialisation was seen both as the rationale and the enabler of distance education. From the 1960s, distance education took on a new respectability and gained a new impetus because of advances in technology— first TV and then computing. Resulting changes to theory included a move from seeing distance education as a special field separate from pedagogy generally, to sub-field of education, a view that brought with it a concomitant possibility of incorporating some of the existing theoretical principles and practices of traditional higher education.

As the information revolution has progressed, and the internet and advanced video technologies have become commonplace, the possibility of synchronous communication between learner and student and student and student at a distance has become a reality. This major change has seen theoreticians starting to talk about equivalency in distance education. That is, the same possibilities in procedures, processes and outcomes might exist for both traditional and distance education students. This idea was certainly put into practice quickly with the advent of learning management systems.

Universities have rushed headlong into the use of technology such as WebCT and Blackboard for both on campus and distance students despite little empirical research as to the efficacy, advantages, possibilities, drawbacks or readiness of students and staff to adopt the technology. Theory and research now appear to be very much on the trailing edge, as practitioners struggle to

use the new technologies in ways they know are valid, efficacious and proven.

Persistence in higher education has been well researched since the mid 1960s (Astin, 1964; Bayer, 1968; Vaughan, 1968, Astin, 1975, Tinto, 1975). Research on attrition and retention in distance education began in the 1970s (Glatter and Wedell, 1971) and gained momentum during the 1980s (Connors 1980, Kember 1981, Shale 1982, Rumble 1982) but still constitutes a comparatively small portion of attrition research as a whole. Initially, attrition research concentrated on various factors or variables which were possible predictors of dropout or persistence. The data related to persistence were usually either personal or environmental. To date there the findings regarding personal variables such as age, gender, employment status, educational level, have been contradictory and inconclusive. Whereas, the literature has been more consistent in identifying environmental variables, such as course design and institutional interaction, as having a positive influence on persistence. Indeed, while there are many predictors that are not related to, or controlled by, the institution; there appears to be substantial room for improving student retention through improved institutional processes, policies and practices, course design, support and preparatory programs.

In addition to descriptive studies on persistence, over the years there have been many theories and models created to help explain attrition. The theory of social and academic integration by Tinto (1975), for example, is well accepted and has been adapted by many scholars. Bean and Metzner's (1985) model and Kember's (1995) model were examples of modified forms of Tinto's model that included special characteristics of distance education. Studies on social and academic integration (Tinto, 1975; Kember, 1995) have indicated that it is important for students to be satisfied and feel that they are

part of a learning community. Also, interactions between the student and the instructor, as well as all other forms of interactions whether of an administrative or academic nature, seem to all contribute to a student's sense of belonging and satisfaction in distance education.

Perhaps most importantly, this review of the literature revealed a general agreement that an adequate model of student attrition in distance education is yet to be produced. While Kember's (1995) model has been well accepted, and an amount of research has backed up many of his conclusions, Kember's explanation is not considered complete. Also, in the last decade or so, there has been considerable additional thought, research and technological advance related to the field of distance education. These developments alone would appear to justify a review of the existing models of persistence in distance education.

Chapter Three

MODELLING STUDENT PERSISTENCE

This chapter examines attempts to model student persistence in detail. It also contains an explanation of the process undertaken as part of this study to devise a new, updated model of student persistence in distance education. The chapter is divided into three sections. The first section details developments in modelling student persistence. The second section outlines the inductive process used to develop a new model and in the third section the components of the new model are explained.

I. DEVELOPMENTS IN MODELLING STUDENT PERSISTENCE

Since the 1960s researchers have speculated about the mechanisms and processes that affect student persistence. Early research focused on the use of ability measures and high school performance measures to predict college grades (Fishman & Pasanella, 1960). Spady (1970, 1971) applied the work of Durkheim (1951) to his development of a college student attrition conceptual model. Essentially, Durkheim found that suicidal tendencies increased in people who were not integrated socially and normatively into their existing social system. Spady (1970) perceived a parallel process occurring in college students who dropped out, albeit an occurrence not as drastic as suicide. Students who did not share values and orientations similar to other students,

did not interact socially with other students, and generally did not feel compatible with the social system of college, were more likely to drop out.

Spady's (1970) initial model of college student attrition proposed five independent variables, four of which (grade performance, intellectual development, normative congruence, and friendship support) actually influenced the fifth variable (social integration). These five variables were then linked indirectly to the dependent variable (dropout decision) through two intervening variables (satisfaction and institutional commitment). Spady (1971) then applied his proposed model for college student attrition in a longitudinal study of 683 first-year undergraduates at the University of Chicago. His purpose was to operationalise the variables of the model and analyze how separate components and interrelationships explained the attrition process.

Spady's (1971) revised model, based on his findings in this study, retained the elements in his original model but added two important improvements. The first was the inclusion of a separate component comprised of structural relations and friendship support. The second improvement was a revision of the relationships among the components in the model.

Tinto's Conceptual Schema for Dropout from College (1975)

Tinto (1975) completed the next major development of a student attrition model. Connecting his model to the theories proposed by Durkheim (1951) and building on the work of Spady (1970), Tinto's 'Conceptual Schema for Dropout from College' (Tinto's model) continues to be the most widely recognised and tested model used for traditional on-campus students. Tinto's model is also of major relevance to distance education in higher education as many of the models dealing specifically with the persistence of distance

students are based largely on this seminal work.

Tinto's model (figure 3.1) included the individual's family characteristics such as socioeconomic status, parents' education, and parental levels of expectation and the relationship between parent and student. The individual student's background factors included; sex, high school grade performance, educational experiences prior to college, entry motivation and goal commitment, academic ability and personality characteristics and attitudes. Other factors included external impacts such as changes in employment and how this might affect a student's cost-benefit analysis of staying in higher education. Tinto's model differed from previous models as he viewed student progress as longitudinal and a product of group interactions rather than of merely individual attributes. He thought that student background characteristics affect student interactions within the university environment, which in turn led to social and educational outcomes; and it is the assessment of these outcomes that influences the student's decision to withdraw or persist.

This theoretical model of dropout argues that the process of dropout from college can be viewed as a longitudinal process of interactions between the individual and the academic and social systems of the college during which a person's experience in those systems (as measured by his normative and structural integration) continually modify his goal and institutional commitments in ways which led to persistence and/or to varying forms of drop-out (Tinto. 1975, p. 94).

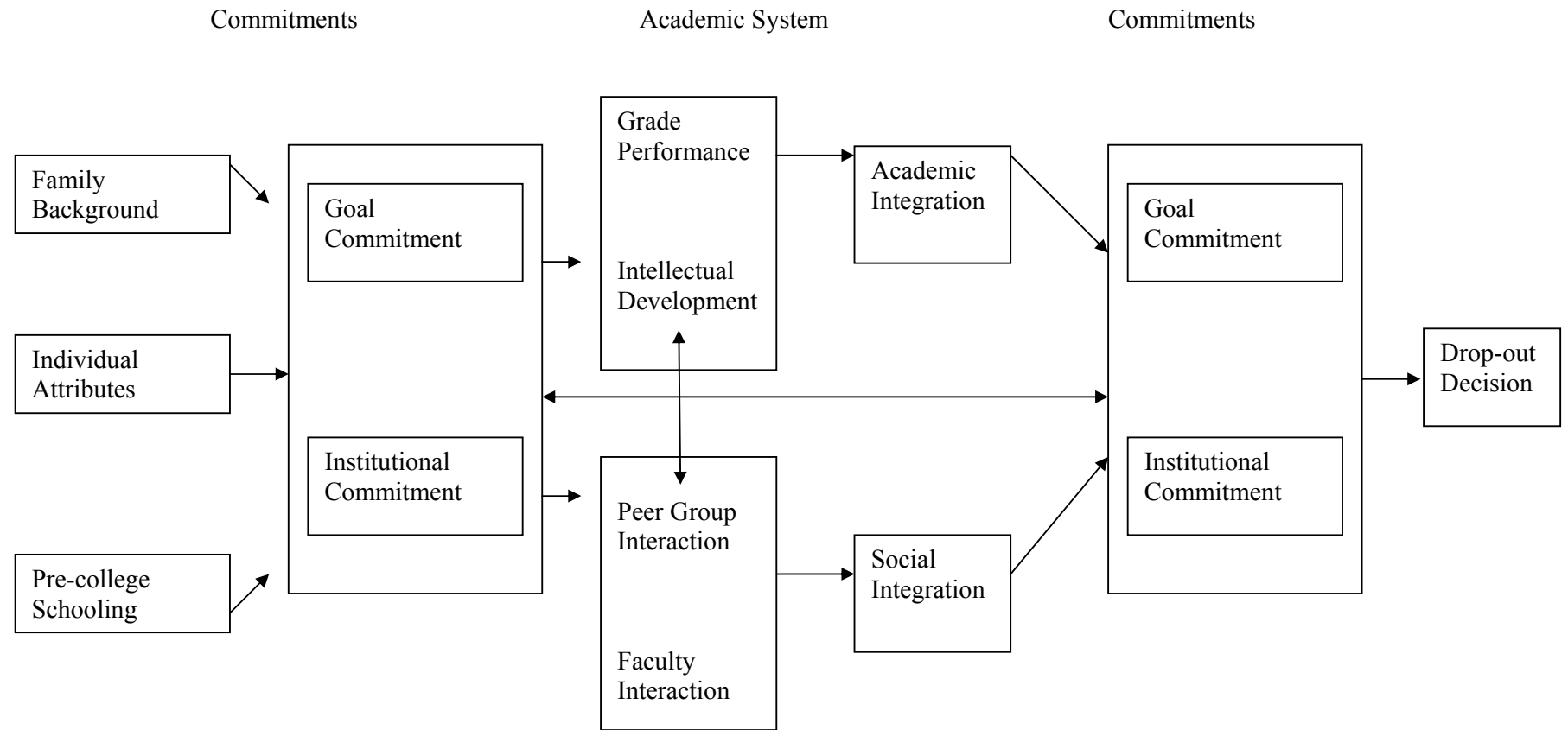
Tinto refined and added to his model of student attrition in a major work on the topic in 1993. The robustness of Tinto's model is indicated by the fact that even after nearly twenty years of testing and analysis it remains conceptually very similar to its original form when first published in 1975. Tinto's model has been tested extensively (Cabrera et al. 1992; Bernard & Amundsen 1989)

and been found to predict persistence and drop-out with a high degree of accuracy for young full-time students attending on-campus.

Some of the detail of Tinto's model is inapplicable to the situation where adult students are studying remotely—such as those elements centring on the social integrations of students into the student body. One aspect of his work, however, that would appear to be very relevant is the idea of goal commitment. Indeed, it would be logical that being committed to completion is even more important in the distance education context, and it is telling that Kember later includes this concept in his model.

Following on from previous work by Terenzini and Pascarella, Terenzini, Lorang and Pascarella (1981) tested a modified version of Tinto's model of the drop-out process. They suggested that five factors have a direct affect on a student's decision to drop out. These were: (1) peer group interactions; (2) interactions with faculty; (3) faculty concern for student development and teaching; (4) academic and intellectual development; and (5) institutional and goal commitments. The study was conducted concurrently at two separate institutions and they found that their factor structure of a 34-item integration measure was almost precisely replicated between the two. Their five integration scales made significant and unique contributions to the explanation of variance in both studies. In both, the institutional interaction and goal commitments scale was the largest unique contributor to group differentiation.

Figure 3.1. Tinto's Model of Student Progress (Tinto, 1975, p. 95)



While none of the other integration scales in their study made reliable and unique contributions, the differences in group means were all in the expected direction. They concluded that the entry of integration scales in both studies made statistically reliable and substantial improvements in the percentage of cross-validation cases correctly classified, and in both studies only limited slippage in the correct classification percentages occurred when the integration scales alone were used in the cross-validation classification of cases. The percentages of correctly classified cases were also quite similar across the two institutions. Thus, despite some differences in the pattern and magnitude of the contribution of individual scales, the substantial classification efficiency in both investigations suggested that the five scales may be useful in developing specific prediction equations for individual institutions.

Cabrera, Castaneda, Nora, and Hengstler (1992) and Cabrera, Nora, and Castaneda (1993) proposed a model of persistence that synthesised the work of Tinto and Bean. Drawing on Tinto's research, Cabrera, Castaneda, Nora, and Hengstler included constructs such as interaction, integration, and commitment in their model, and incorporated from Bean's work constructs such as external support and achievement. Research by Nora and Cabrera (1996) and Eimers and Pike (1997) supports the validity of this model and suggests that two forces—academic achievement and institutional commitment—directly influence persistence. Factors, such as academic and social integration, faculty-student interaction, and support from other people exert significant indirect effects by acting on achievement and commitment.

Bean and Metzner's Model (1985, 1987)

Bean and Metzner developed a conceptual model to explain the drop-out of non-traditional students. Their study indicated that non-traditional students

(mature-age, part-time, etc.) were more affected by the external environment and less affected by social integration variables compared to traditional students. Bean and Metzner explained this by assuming that non-traditional students spent more time in the external environment, attended part-time and lived off-campus. As a result Bean and Metzner replaced social integration with external environment in their study. They also included factors to do with individual background such as age, study load, educational goals, high school performance, ethnicity and gender.

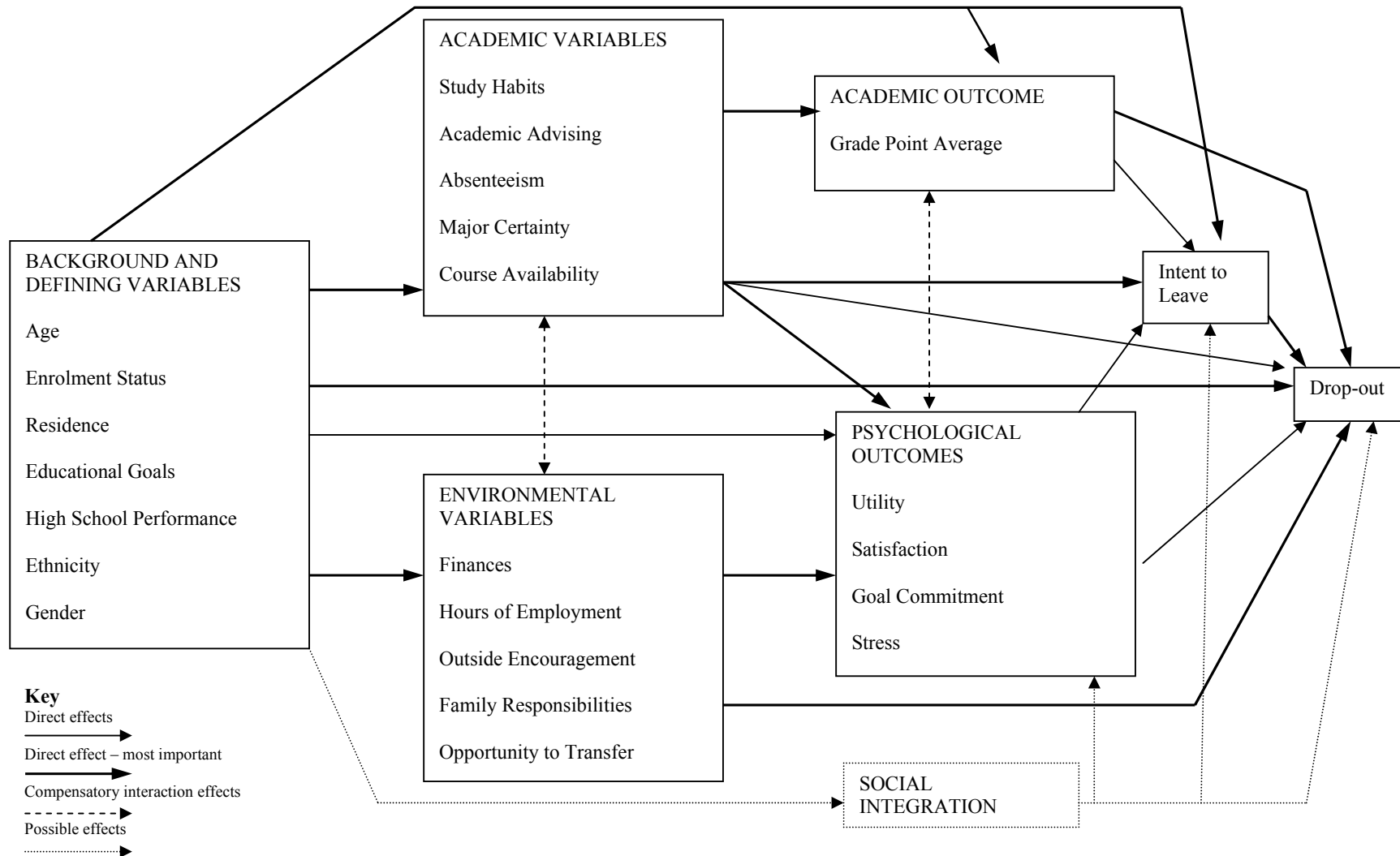
Bean and Metzner's model (figure 3.2) differed from previous models by their inclusion of 'environmental variables', such as finances, hours of employment, outside encouragement, family responsibilities, and opportunities to transfer between institutions, alongside previously posited factors such as academic variables. According to Bean and Metzner:

When academic and environmental variables are both good (i.e. favourable for persistence) students should remain in school, and when both are poor, students should leave school (Bean and Metzner, 1985 p 491).

and further:

When academic variables are good but environmental variables are poor, students should leave school, and the positive effects of the academic variables on retention will not be seen. When environmental support is good and academic support is poor, students should be expected to remain enrolled... Thus, for non-traditional students, environmental support compensates for weak academic support, but academic support will not compensate for weak environmental support (Bean and Metzner, 1985 p 492).

Figure 3.2. Bean and Metzner's Model (A conceptual model of student attrition, 1985)

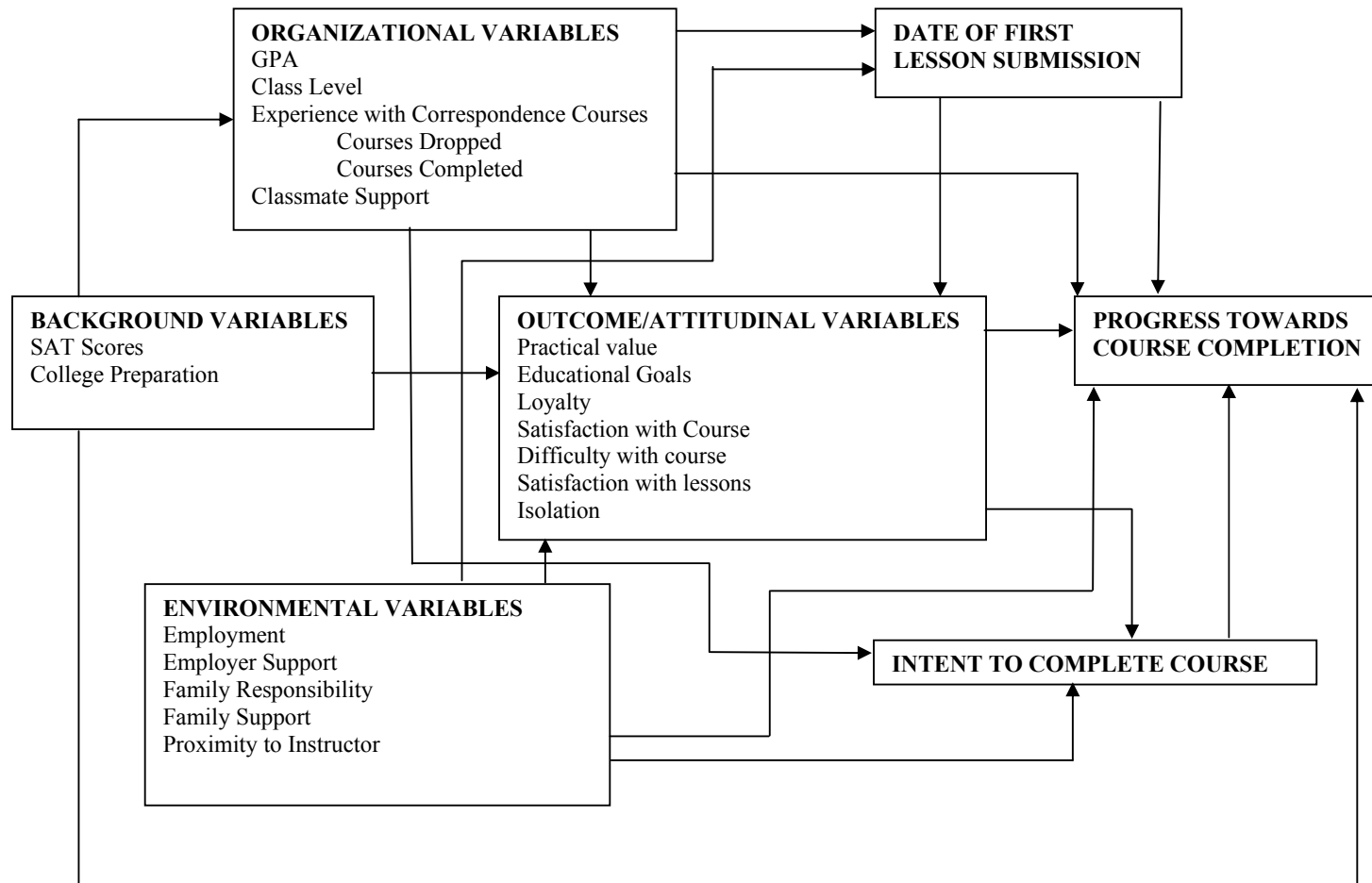


Bean and Metzner's model therefore, highlights the importance of the inherent and background characteristics, motivation of students, and environmental factors as important variables for non-traditional learners—although these factors were not investigated in detail and the interactions between the three types of factors were not identified.

Refinements to the Bean and Metzner Model

Billings (1987) developed a model of progress in correspondence courses based on the work of Bean and Metzner. Her model contained 20 variables and a number of linkages and paths (Figure 3.3). Billings tested the model on 64 students enrolled in a bachelor level nursing program studying by correspondence. Billings found both her student background variables (SAT and college preparation) had indirect effects on other variables in the model (but no direct effect on course completion). Two of the organisational variables, GPA and experience with correspondence courses had a strong positive correlation with course completion. The experience of dropping a course while enrolled was negatively correlated with completion. Billings found that students' perception of employer support was significantly related to course progress (though 31% of the students in the study were not employed). Students who lived at a distance from the instructor were less likely to submit the first lesson soon after enrolling in the course.

Figure 3.3. Billings's Model for Completion of Correspondence Courses (1987)

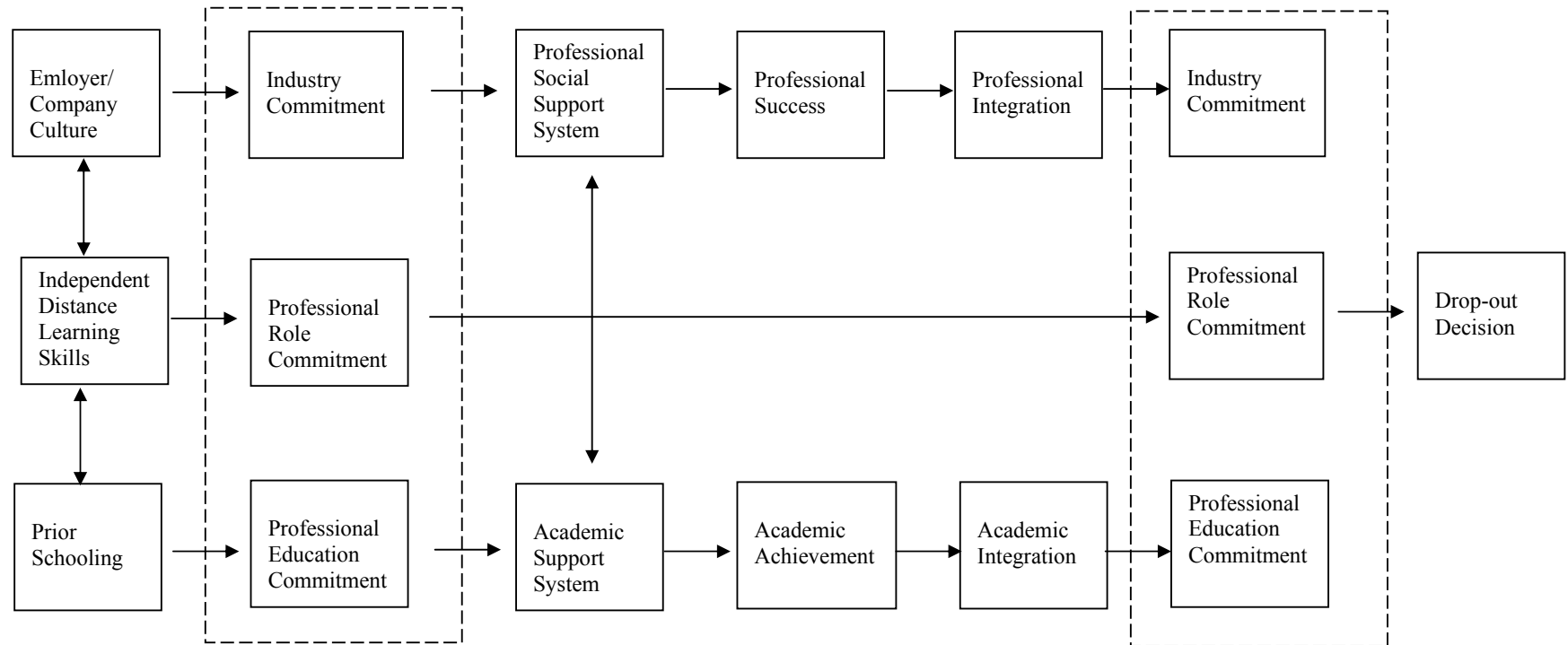


Perception of support from the family explained the effects of seven of the other variables in the model. Family support was perceived by the participants as being important not only in course progression but also to value the course, manage course difficulties, and maintain loyalty to the institution. Of eight attitudinal variables only *education goals* had significance in the model. This variable was found to have a significant effect on the 'intention to complete' variable and was important for completing the program and obtaining the degree. Submission of the first lesson was significantly related to course progress. Of all the variables in Billings's model, intent to complete had the most effect on progress.

Bajtelsmit's Model of Attrition in Distance Education (1988)

Bajtelsmit's conceptual model was derived from three observations: theories which focus on socialisation such as Tinto's have only minor relevance to distance education, the influence of the external environment such as family and especially employment must be given prominence, and psychological factors (e.g. learning skills, attitudes, and motivations) must be accounted for in a relevant way. In Bajtelsmit's model (Figure 3.4) the employment or *occupational* component featured prominently while the social integration concept was relegated to a supporting role. The structure of the model was distinguished by two tracks, one containing occupational variables and the other academic variables in temporal order preceded by a set of background (entry characteristic) variables relevant to both major components. The structure recognised that, unlike traditional education where a student enters a new social framework on a full-time basis, the part-time distance education student remains highly responsive to the external environment. An implied time split was reflected in the two tracks, the lower portrayed the academic sector and the upper the *external environment* with an emphasis on occupational sub-systems. Instead of examining how the individual fits into

Figure 3.4. Bajtelsmit's Dropout from Professional Distance Education Model



the larger society/educational subsystem like other models, Bajtelsmit's model was concerned with how well the distance education sub-system fits within the student's individual system.

Dropout, in Bajtelsmit's model is determined by the congruencies and compensatory relationships between the academic and occupational sectors. If there is a close relationship between the academic and occupational components this should reduce the probability of dropping out. However, according to Bajtelsmit, the relationship between these principal components can be moderated or mediated by the other components in the model such as *background/skills* or *entry commitments*. For example, good distance learning skills could compensate for poor environmental support or vice versa.

When Bajtelsmit tested his model, he found that while it did not fully explain the attrition process, many of the results drew a picture of promising support, as there were some indications of a link between employer support and success or drop-out. The principal finding was that the external environment was very influential in determining whether a student dropped out. Bajtelsmit thought that this indicated that institutions needed to re-think their approaches to the attrition problem with more outreach type programs. The other principal finding was that learning styles were very important in distance education success.

Garland's Barriers to Persistence Model (1993)

Garland's research was an attempt to identify the potential barriers to persistence for distance learners. The study involved 47 students who had enrolled at the University of British Columbia, of which 17 withdrew and 30 persisted. Garland found that there were four principal categories of barrier to persistence for these students. The first was *situational* problems and involved

environmental pressures—such as lack of support from family and peers, a poor study environment at home, lack of time including problems caused by a change in circumstances, over-commitment and incongruent expectations in respect to the amount of time required to study, *institutional* problems such as poor instructional design, cost and poor communications, *dispositional* problems such as learning style problems, lack of clear goals, stress, and adult pride/fear of failure and lastly—epistemological problems such as lack of background, incongruence with the student's epistemological stance or an internal epistemological gap between the material presented and institutional expectations (Garland, 1993).

Garland found that because the variables in her model were complex, they could have ill-defined permutations, were often context dependent, and sometimes acted additively and synergistically in such a multitude of ways that decisions to withdraw appeared idiosyncratic in nature. Despite this, Garland concluded that persistence could be enhanced by creating a widespread awareness on the part of distance educators of the essentially idiosyncratic nature of withdrawal and persistence. By doing so, both professional development and institutional improvement could focus on creating the uniquely optimal conditions for each and every learner to persevere, while acknowledging that we may not understand all the factors at work. She specifically nominated proactive tutorial assistance, providing prerequisite knowledge transitions or separate 'primer' materials, paying greater attention to clarity and readability in written materials, and increasing interactive opportunities as useful areas to begin a persistence program (Garland, 1993).

Rezabek (1999) conducted a study based to some extent on Garland's model. Rezabek's study was on the barriers to distance education enrolment and in

the findings grouped these barriers into three categories similar to Garland's. According to Rezabek the principal barriers were; *situational barriers* resulting from an individual's general situation or environment, and included such issues as transportation, age, time constraints, and family responsibilities, *institutional barriers* created by an institution's programs, policies, and procedures, and included problems with admissions, registration, scheduling of courses, financial aid, and support services and *dispositional barriers* resulting from an individual's personal background, attitude, motivation, learning style, and self-confidence.

Kember's Model of Student Progress (1995)

Perhaps the most comprehensive, documented and tested model is Kember's model of adult open learning. The origins of Kember's model go back to his study with Kilpatrick and Osborne at the University of Tasmania in the 1980s (Osborne, Kilpatrick, & Kember, 1987). Kember's work further drew on research and experience in Hong Kong in the early 1990s. He published a monograph on the model in 1995.

In Kember's (1995) model, factors that affected the dropout decision in distance education were identified. Such factors included demographic characteristics (individual characteristics, family size, housing conditions, employment, salary and educational background), goal commitment and motivation, academic integration (such as interaction with instructor, feedback from the institution, personal contact with tutors) and social integration (including the degree to which a student can integrate study with his/her work, family and social life). A graphic representation of the model appears in figure 3.5.

Kember (1995) tested his model at a number of institutions and using students in various programs. This research culminated in a study conducted at the Open University of Hong Kong in the early 1990s, the results of which verified the usefulness of the model. Moore and Kearsley (1996, p 209) suggested that his model was one of the 'best illustrations of how theory should affect practice and vice versa' and Roberts (1995) claimed that

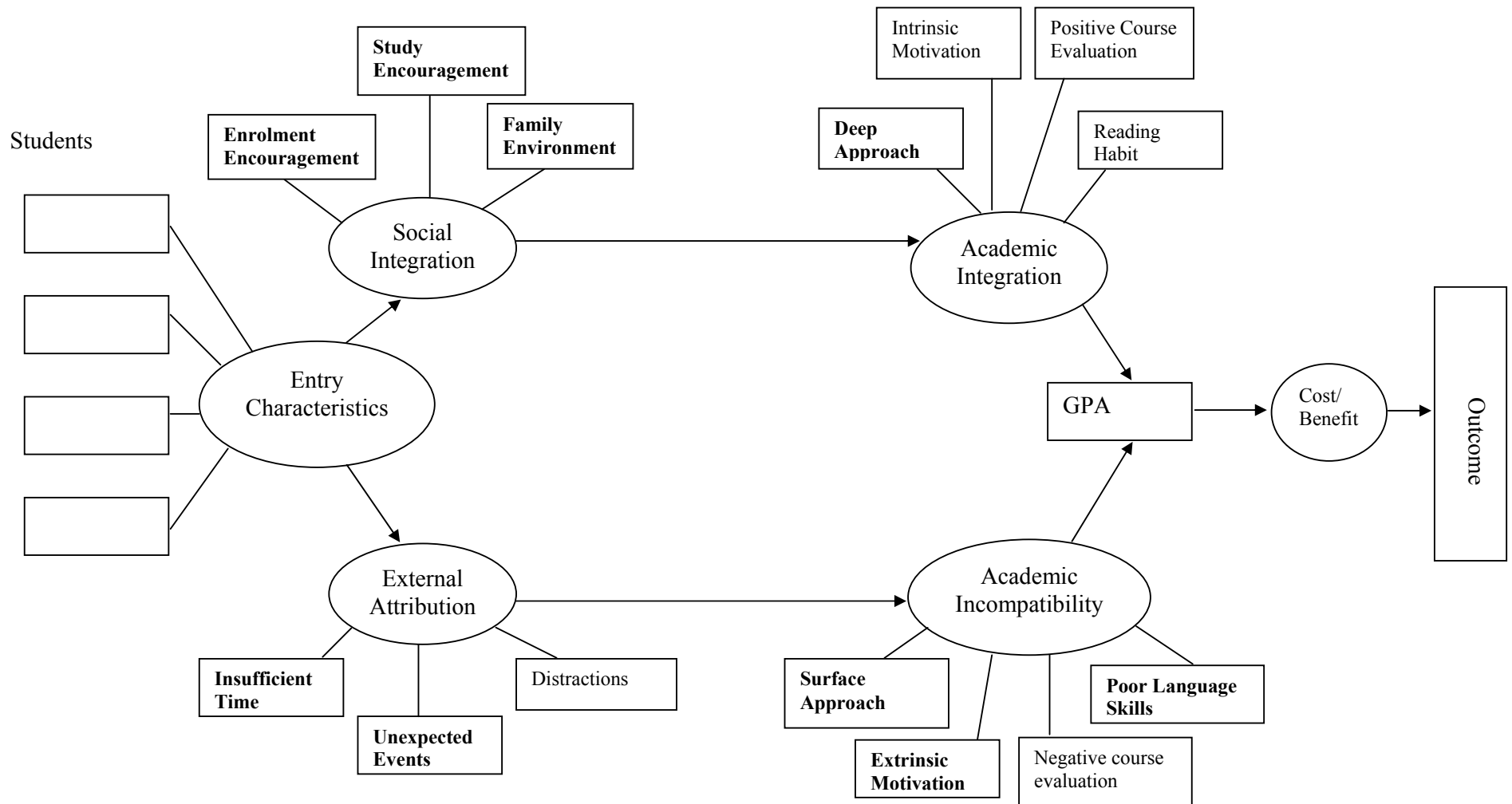
the model would have an impact on the thinking of educators around the world involved in the provision of adult courses offered by distance mode (Roberts, 1995, p 63)

and was

the first comprehensive and workable model on student progress in open and distance learning to be tested by qualitative and quantitative methods (Roberts, 1995, p 64).

However, as previously discussed, Kember has not been without criticism. Woodley, de Lange and Tanewski surveyed Open University students who were at varying stages of a variety of programs. Kember's questionnaire was modified slightly to take account of the Open University setting. The study concluded that several aspects of Kember's model were unresolved. For example, some of the sub-scales showed low internal consistency, perhaps indicating that not all individual items were measuring the same concept and they did not agree with Kember's addition of Grade Point Average (GPA) into the model. Woodley De Lange, and Tanewski also suggested that it might be more accurate to view student progression as a continual process of decision making based on the total forces acting on the individual at a given time, rather than students' choices putting them on one of two paths.

Figure 3.5 Kember's Model of Student Progress.



MacKinnon-Slaney's Model (1994)

MacKinnon Slaney's model of adult persistence in learning was constructed by analysing the literature on adult learning and development together with that focussing on learning approaches and personal-institutional interaction amongst students. The model emphasised the entry characteristics seen as individual and inherent to the student. The model was developed as a tool for counsellors to assist individuals in persisting in their studies through advice and guidance and to aid retention through individual student support at the earliest stages of their studies. MacKinnon Slaney's model had ten factors divided into three components all of which influence persistence. The first component was 'personal issues' and was comprised of *self-awareness, willingness to delay gratification, clarification of career and life goals, mastery of life transitions, sense of interpersonal competence*. The second component was comprised of *educational competence, and intellectual and political competence*. The third component was made up of *information retrieval abilities, awareness of opportunities and impediments, and environmental capability*. In the Mackinnon-Slaney model, the first component is an attempt to encapsulate those characteristics of an individual such as a habit of self-reflection which in turn should facilitate feelings of control and persistence.

In a particular sense of self, a hardy academic self concept, self assurance in achievement situations, a healthy dose of achievement motivation and a certain degree of confidence in managing the bureaucracy must be present on a day to day basis (Mackinnon-Slaney, 1994, p 270).

In the second component, factors connected to learning issues were the principle foci. Both an institutional assessment of the educational competence of the student and the student's own evaluation of their educational competence were considered. Mackinnon-Slaney also believed that a consideration of the political interactions between institution and student—

such as class, race and gender issues needed to be factors in this component. The third component dealt with the institution's need to accommodate individual differences by considering family problems and career issues as well as situational or physical considerations such as a print or mobility disability. The model has been put to practical use by Mackinnon-Slaney through a questionnaire (Adult Persistence in Learning Scale Questionnaire – APIL) and is claimed to be able to predict if problems might occur with students facing a return to study. Neither the model nor the APIL have yet been tested empirically and the model remains largely a theoretical tool for student counsellors.

Kennedy's Model of Persistence in Online Learning

Kennedy (2001) observed that five variables emerged from her research as having a potentially significant impact on student learning in an online environment. The first of these were *goals and motivation*. Kennedy suggested that a student's purpose for taking a course sets the stage for becoming more or less engaged in the course, and this in turn affects learning. The next two variables identified by Kennedy were categorised together as *student practices*. The variables themselves were *student interactions with faculty* and *student study habits*. For Kennedy, faculty interactions were important to help students internalise the values of the academic community, while study habits could more directly enhance or inhibit learning. The last two variables in Kennedy's model were categorised together as *technological aspects of learning*. The variables themselves were *attitude to computers and online learning* and *computer competence*—that is the student's actual familiarity with online technologies. According to Kennedy, technology represents the gateway or the roadblock to learning activities depending on students' attitudes to and competencies in computer technology. Kennedy claimed her test of her model successfully illustrated the causal effects of the variables within the model.

II. A NEW MODEL OF PERSISTENCE IN DISTANCE EDUCATION

This section outlines and explains the process undertaken as part of this study to develop a new model of student persistence in distance education. After a review of the literature it was decided to incorporate both static elements (such as entry characteristics) and dynamic elements (such as the student's interactions with environmental and external forces) into the model. Also, as static, predictive models had been mostly unsuccessful in the past, it was decided that the model would be of a student's 'propensity to persist'—a construct that could, in theory, be calculated at any given time during a student's progression. Such a construct, it was thought, could both inform decisions by institutions regarding assistance or pathways for students at initial enrolment, and could also be used to alert institutions of students at risk during the course of their programs.

The components, interactions and dependencies of the model were determined primarily by an inductive process. Included in the process were efforts to model distance education as revealed in the literature review, past tests of previous models, observations of student behaviour in distance education and recent theoretical propositions put forward by leaders in the online learning field. The model was constructed using the following criteria: ability to predict future observations, cost of use, verifiability and refutability, simplicity, visualisability and aesthetic appeal. Many of the principles of 'choice modelling' propounded by Fosgerau (2008) were used to make decisions regarding the formulation of the model.

Identification of Model Components

The starting point for the new model was a list of all the separate factors in all the conceptual models pertaining to persistence in distance education. This

produced a list of some 24 variables – a number felt to be too unwieldy for a useful model. Therefore a decision was taken include only those that had been validated by two or more of the previous studies or which were directly applicable to the research questions specified in the aims and purposes of the study. This left the following (listed in Table 3.1): *prior education, computer experience, preparation, attitude to online learning, self-efficacy, goal commitment, family support, employer support, peer support, learning approach, motivation, institutional interaction, distractions, unexpected events, and change in circumstances*. The resulting model contained 15 variables—perhaps still an excessive number for an abstract model or a potential empirical model. To produce a more workable model Tinto’s fundamental work was re-visited. For example, in his model, Tinto grouped his factors into scales and it was clear that this was a sensible approach to take with the composite model. Tinto’s model reduced to its simplest form was;



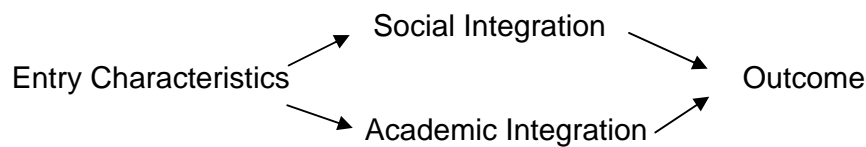
Most of the 15 variables selected for the proposed model fit into one of these scales. However, in Tinto’s model, which pertains to traditional on-campus students, academic integration is linked to, and is a function of, good social integration. Researchers in the distance education field have had to re-think the concept of social integration for distance students, changing the concept to the student’s ability to integrate their studies into their social interactions with work colleagues, family and friends as outlined by Garland (1993) and Kember (1995) (in the online world this might also include interactions with other students in a virtual environment) rather than social interaction with other students and university facilities as described by Tinto (1975).

Table 3.1. Matrix of the sub-components or subscales of several models.

Factors*	Bean and Metzner	Billings	Bajtselmit	Garland	Kember	Mackinnon-Sloney	Kennedy
Age	X						
Race/Ethnicity	X						
Gender	X						
English Ability					X		
<u>Prior Education</u>	X	X					
Study Load	X						
Distance		X					
Hours of Employment	X						
Income	X						
<u>Computer Experience</u>						X	X
<u>Preparation</u>			X		X		
<u>Attitude to Online Learning</u>							X
<u>Self-Efficacy</u>				X		X	
<u>Goal Commitment</u>		X	X	X	X	X	
<u>Family Support</u>		X	X		X		
<u>Employer Support</u>			X		X		
<u>Peer Support</u>					X		
<u>Learning Approach</u>			X	X	X		
<u>Motivation Type</u>			X	X	X		
<u>Institutional Interaction</u>	X			X	X	X	X
<u>Distractions</u>			X		X		
<u>Unexpected Events</u>			X		X		
<u>Change in Circumstances</u>			X		X		

* Factors underlined are those chosen for this study

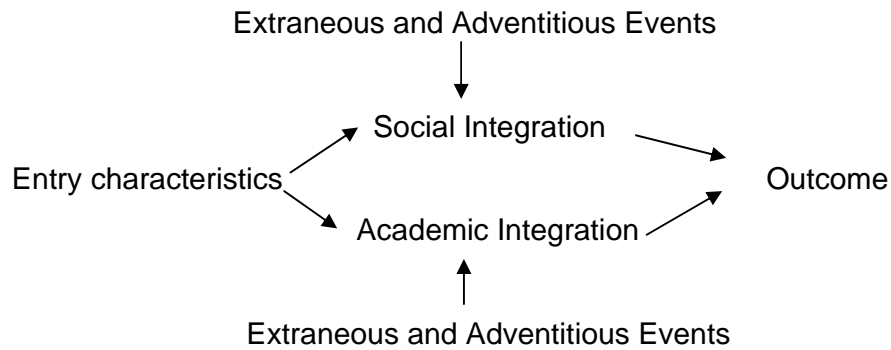
Considering this reformulated idea of social integration, it is conceivable that there might be little linkage between social integration and academic integration as envisaged by Tinto. Rather, there is a distinct possibility that a distance student could integrate their social life and studies very well but remain at a loss with regards to academic integration — or vice versa. Therefore, the choice was taken to view academic integration and social integration as independent of each other. The outline of the model was now:



This was simple—but could it be descriptive enough to be useful and did it fit the variables selected? It was clear that some of the factors in the list were Entry Characteristics—*prior education, computer experience, preparation, attitude to online learning, self-efficacy, goal commitment* (although goal commitment probably contained an ongoing dimension). Social Integration obviously included *family support, employer support, peer support*; and Academic Integration was constituted by *learning approach, motivation type, and institutional interaction*. However, where did *distractions, unexpected events, and change in circumstances* fit in such a model? It was clear that in Tinto's model susceptibility to such forces was a consequence of poor integration. But in the case of distance students it seemed obvious that even the most prepared and studious would be very much subject to their environment compared to traditional on-campus students.

Kember, who also used scales in a similar way to Tinto, had included external factors. These external environmental forces seemed something apart from the distance student. It was therefore decided to add this as another

component to the model. However, so as not to create confusion with Kember's 'External Attribution' it was decided to label this factor 'Extraneous and Adventitious Events' a term used by Yorke et al. (1997). The model now, in its skeletal form, looked like this;



The resulting model is a little like Kember's with the criticised cycling concept removed and with no negative or positive paths. And logically, if one does away with his two track cycle concept, academic integration in the new model incorporates both the academic compatibility and incompatibility of Kember's model, as these are really two sides of the same concept. This yields a model much more similar to Tinto's original model of student progress for traditional on-campus students upon which Kember's model was based. However the new model still has one extra component than that of Tinto's—Extraneous and Adventitious Events—leaving a model with a total of four components, three of which are parallel and independent.

In a mathematical description of the new model *Entry Characteristics* could be seen as a constant whereas *Academic Integration*, *Social Integration* and *Extraneous and Adventitious Events* are variables. And, in the new model for this study, the decision to withdraw is as a function of time rather than taking a particular path. A student either consciously or unconsciously decides to keep studying throughout the course depending of the values of the components in the model. A possible schematic representation of the model is

shown in Figure 3.6. A formula to summarise the model (recognising of course that something as complex as student behaviour cannot realistically be reduced to a simple formula) would be:

$$P_t = E + A_t + S_t + X_t$$

where t = time, P =Propensity to persist, E = Entry Characteristics, A =Academic Integration, S = Social Integration and X = Extraneous and Adventitious Events (X probably most often being a negative value).

III. COMPONENTS OF THE NEW MODEL

The model's four components or factors are each comprised of a number sub-components or sub-scales. The factors or scales, *Entry Characteristics*, *Social Integration*, *Academic Integration* and *Extraneous and Adventitious Events* are listed below together with each of their sub-scales. Each of the fifteen subscales has been labelled with a letter between A and O. These letters will be used repeatedly to identify the sub-scales in the remainder of this thesis.

Entry Characteristics

- A. Educational Background*
- B. Computer Experience*
- C. Preparation*
- D. Attitude to Distance and Online Learning*
- E. Self-Efficacy*
- F. Goal Commitment*

Social Integration

- G. Family Support*
- H. Employer Support*
- I. Peer Support*

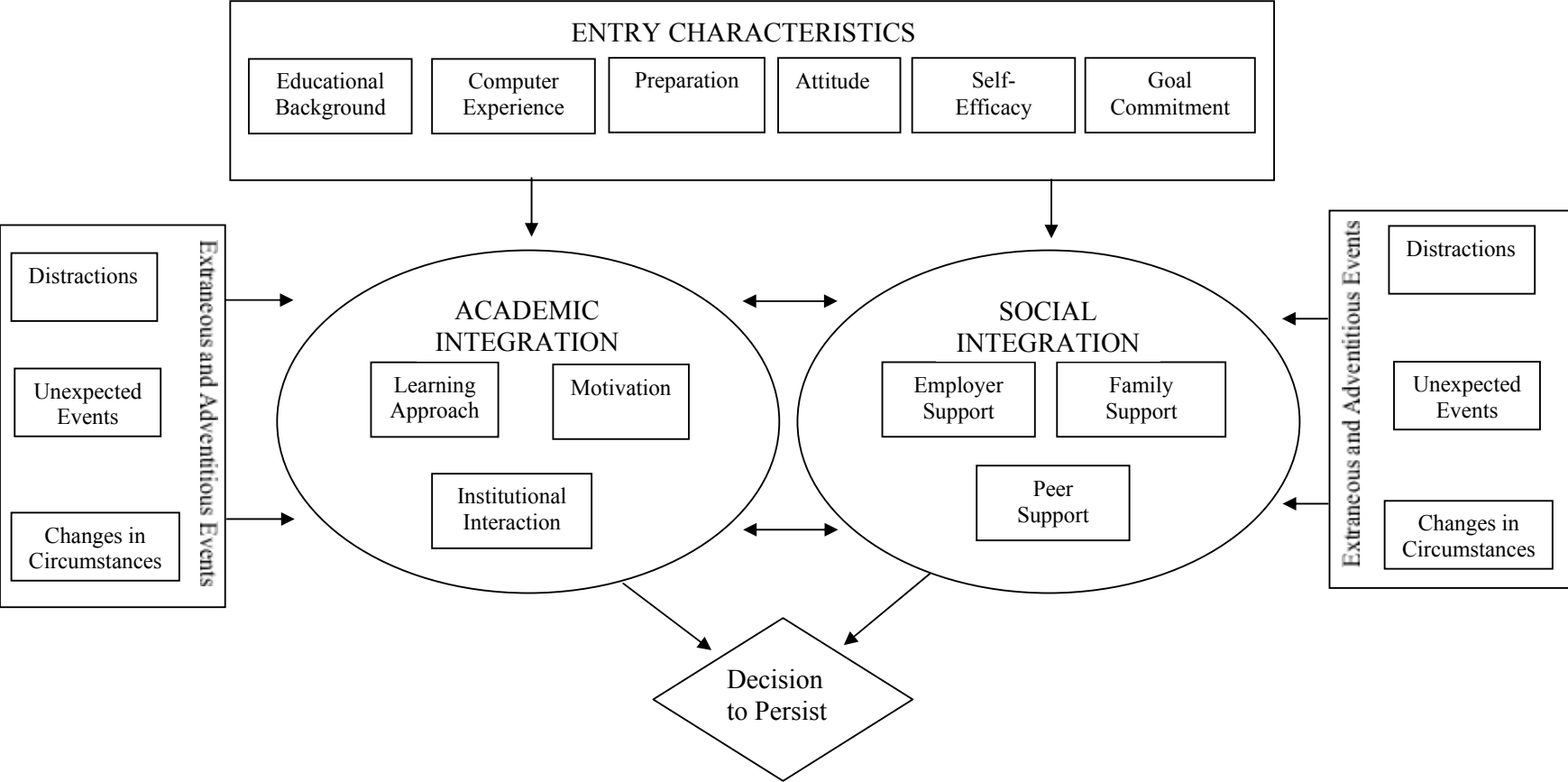
Academic Integration

- J. Learning Approach*
- K. Motivation*
- L. Institutional Interaction*

Extraneous and Adventitious Events

- M. Distractions*
- N. Unexpected Events*
- O. Change in Circumstances*

Figure 3.6. New Model of Student Progress for this Study.



Entry Characteristics

All the recent models of persistence in higher education, for both traditional and non-traditional study, include entry characteristics in some way (Spady, 1971; Tinto, 1975; Kember, 1995; Woodley, 2001). There is substantial literature on the relationship between entry characteristics and attrition, and most institutions use performance in past educational endeavours as a primary criterion for entry into higher education programs. But as reflected in the widespread existence of mature entry or open entry schemes, prior performance is not considered an absolute indicator of future success. In many of the studies looking at open or distance learning there is often insufficient correlation for entry characteristics alone to be a valuable predictor for successful completion. However, there is sufficient evidence to show that entry characteristics do influence student behaviour and, for the same reason that Kember included entry characteristics—that entry characteristics influence, inform and affect students academic and social integration—they are included in the model.

The sub-components or sub-scales that make up Entry Characteristics for this study are *educational Background, computer experience, preparation, attitude to online learning, self-efficacy, and goal commitment*. In several previous studies, the term 'entry characteristics' was used for biographical characteristics such as employment status, marital status and age. However, although these data were collected for the study they were not included under Entry Characteristics in the model. Because this was a longitudinal study and over time participants changed jobs, married, divorced became unemployed or retired, it was decided to map these changes in the extraneous and adventitious events component.

A. Educational Background

Educational background, particularly formal educational qualifications, is a widely used predictor of success in educational courses. The indicator is not only used as a predictor but also often as a formal entry requirement. Traditionally students are denied entry to a particular level of education if they have not successfully completed the previous level. Where places are limited they are normally awarded to those with the best results from the previous level. However, the relationship between educational background and persistence and performance has been widely researched. Grade performance in secondary school has been shown to be related to performance in higher education by studies such as those by Lavin (1965), Astin (1968), Blanchfield (1971), Chase (1970), and more recently—McKenzie and Schweitzer (2001). The p value¹³ correlations between final secondary school grades and degree level results are only in the region of 0.2 (Entwistle & Ramsden, 1983, p 33); statistically significant but explaining only a very small proportion of the variance. When mature students are involved (and remote students are considerably more likely to be mature – in this study the average age was 33) the significance is likely to be much less as mature students accrue many years of experience and non-academic learning that stands them in good stead for academic study. The widespread existence of mature entry programs to higher education courses indicates that mature students can and do succeed in higher education. The Department of Education, Science and Training (DEST) has published data about the success of mature age students which indicates that mature entrants do not do quite as well as traditionally qualified students but well enough to justify the existence and continuance of special entry programs (Urban, 1999).

As pressure to gain higher education qualifications and funding encourages the admission of ever increasing numbers of students, academics have begun to have concerns about the entry level skills of even traditionally qualified students. Most academics probably have stories related to the lack of academic skills many new students appear to possess such as this:

After the submission of the first assignment I knew we were in trouble. English language proficiency was lacking, he had never heard of referencing, and his research consisted of re-stating my lecture overheads (Brabazon, 2002, p 48).

The lecturer then relates how after considerable remedial efforts on her part over a number of years, the student eventually graduated with three distinctions in his final year, showing in this case that inadequate preparation did not lead to failure. While such anecdotal evidence is not conclusive, it does show that students perceived as inadequately prepared, can succeed. The question of the increasing need for this sort of remedial role, while beyond the parameters of this study, is an issue because the sort of extra teacher/student interaction is so much more difficult in a remote setting.

However, even though the relationship between educational background and success at the tertiary level is not a simple and direct, *educational background* was included in the model. This appeared to be a reasonable course of action because students with more formal schooling and a history of successful study are more likely have developed a learning approach which is compatible with the demands of tertiary education. Those students without a compatible learning approach, might possibly face more problems with academic integration than those who have had a deep exposure to studying.

¹³ The p-value in statistical hypothesis testing is the probability of obtaining a result at least as extreme as the one that was actually observed, given that the null hypothesis is true. If the level is 0.02, then the results are only 2% likely to be as extraordinary as just seen (Dallal, 2007).

B. Computer Experience

Computer experience has not been a factor commonly examined in research on success in distance education. The change to delivery of most distance courses through the internet by such as WebCT and Blackboard makes this a contemporarily relevant aspect of the field for inclusion. Kennedy (2001) did some work on success in online courses, and computer experience as a determining factor. In Kember's model there was a language ability and reading sub-component. Much of Kember's research was conducted in Hong Kong where a high proportion of students were studying in a second language. Even though a proportion of on-campus students do not have English as a first language in Tasmania (DEST, 2001), one has to make the assumption that most remote students have English as their first language as very few international students are studying remotely (although an increasing number of remote students are studying completely externally from outside Australia). The questions to assess this sub-scale have therefore been shifted towards assessing individuals' skills relevant to the contemporary academic world, that is—information literacy and computer skills. As Kember's survey concentrated on simply English language competency his questions have been supplemented by many taken from an instrument developed by Cathleen Kennedy for research into readiness for online learning. This instrument, the *Computer Use and Experience Survey* has been tested for validity and used in research at San Mateo College and UC Berkeley.

Kember (1995) also included reading habit as a sub-component of language in his model. The reading habit sub-component identifies students who express enthusiasm for reading and claim to read widely and extensively. As enthusiasm for reading also indicates an element of congruence with being a remote student it has been retained as part of the learning approach a sub-

component in the new model. Several of Kember's questions on this topic have been included in the updated survey for this study.

C. Preparation

Preparatory course attendance features in a number of the previous models. It is one of the major services institutions can provide that has shown to have positive influence on outcomes. The research on preparatory courses for 'at risk' students can be difficult to interpret as these courses are often offered to students who are seen as 'at risk', have not studied for many years or who do not meet the usual academic entry requirements of the institution. Comparing the results and persistence of these students to the greater student body is therefore problematic, as this sub-group does not begin at the same base level as other students. Even after taking a preparatory course these students might still be more likely to withdraw or gain poorer results—the essential measure in evaluating preparatory courses therefore is not how these students perform compared to those who haven't but rather the extent to which the outcomes of these students have been improved compared to if they had not done the course—which is no easy task. Despite preparatory courses being relatively common, there have been few studies evaluating their contribution to student retention. Most studies (Meckstroth, 1974; Krannich, Patick, & Pevear, 1977; Mitchell & de Jong, 1994; Chittleborough, 1998; Jones & Gellene, 2005; Youle, 2006) have focused on the improvement of grades and these almost all conclude that preparatory courses do improve academic results. A small number of studies have concentrated on preparatory/bridging programs and distance education retention (McGill & Box, 1997; Clarke, 2004) and these have either found or implied a positive connection between preparatory course completion and retention.

D. Attitude to Distance and Online Learning

Online learning presents many obstacles for adults who have had little else but classroom exposure in their prior education. Many adults have been exposed to 13 years of traditional face-to-face classroom experience in school, and attitudes of (particularly older) students tend to be that this is the complexion of the true learning environment (Clark, 2002; Bernard, 2004). The increasingly diverse range of pedagogical methods being employed by universities includes little that students have previously learned in these traditional classrooms and little of their previous experience has prepared them for online learning. In an online environment the teacher is more of a facilitator or guide. This is a huge shift for many older students (Palloff & Pratt, 2001). Stokes, Basford & Cannavina (2004) found that students still lack the educational readiness for interactive learning media and Bozarth, Chapman and LaMonica (2004) , McVay (2003) and Lynch (2003) all report that academics generally believe many students are unprepared to use web based technology or communicate effectively via electronic means. In 2003, Kennedy conducted a study where she found that a positive initial attitude to online learning was a significant predictor of success in online courses. Students who regarded online learning as difficult, second rate, or intimidating were all less likely to succeed than those who thought online learning could be as useful or as valid as traditional courses.

E. Self-Efficacy

Self-efficacy is a construct commonly used in research in primary and secondary education, and more recently has been identified with successful outcomes and persistence in higher education (Young & Ley, 2005). Self-efficacy refers to personal beliefs about one's capabilities to learn or perform skills at designated levels (Bandura, 1986). It involves judgments of one's

capability to organise and execute courses of action required to attain designated types of performance. Self-efficacy is hypothesized to influence choice of learning activities, effort expended, and persistence (Bandura, 1986). Learners are thought to acquire information to appraise their self-efficacy from their performance accomplishments, vicarious (observational) experiences, forms of persuasion, and physiological reactions. Students' own performances offer reliable guides for assessing self-efficacy. Success generally raises efficacy and failure lowers it, although a strong sense of efficacy is unlikely to be affected by an occasional setback (Schunk, 1989).

A learner's self-efficacy influences his or her cognitive functions (Bandura, 1993) and performance (Pajares, 1996). Research has examined the relation of self-efficacy and achievement outcomes. Studies have consistently obtained a significant and positive correlation between perceived self-efficacy and skilful performance (Relich et al., 1986; Schunk, 1983, 1984; Schunk & Cox, 1986; Schunk & Gunn, 1986; Schunk & Rice, 1986). Most studies have also obtained positive correlations between ability attributions and self-efficacy (Schunk, 1984; Schunk & Cox, 1986; Schunk & Gunn, 1986; Schunk & Rice, 1986). Schunk and Cox (1986) found a positive relation between effort attributions for success and self-efficacy. Self-efficacy also correlates positively with attributions of success to task ease and negatively with luck attributions (Schunk & Gunn, 1986). Relich et al. (1986) developed a learned helplessness index (which emphasised effort as a cause of outcomes and deemphasized ability as a cause of failure). They found, when testing the index with a cohort of students, that self-efficacy correlated positively with achievement.

Research also suggests that self-esteem and self-concept may be influenced by self-efficacy (Lent, Brown & Larkin, 1984; Siegel, Galassi & Ware, 1985; Zimmerman, 2000). These findings supported Bandura's (1986) original

contention that other self-beliefs are mediated by effort, persistence and perseverance, all operational components of self-efficacy (Pajares, 1996). However, it is assumed that high self-efficacy will not produce competent performance when requisite knowledge and skills are lacking (Schunk, 1989).

Research on self-efficacy in higher education is limited but growing. Menec, Hechter and Perry (1995) found in 280 psychology students at university level, that high self-efficacy was correlated to student's achievement as measured by grades. Pajares and Miller (1994) surveyed 391 undergraduates and found that self-efficacy was the best predictor of success in a mathematics course in a comparison with two other predictors. Research involving university students with academic difficulty found that these students had lower self-efficacy (Saracoglu, Minden & Wilchesky, 1989) and had a less optimistic outlook than students without academic problems (Slemon & Shafir, 1997). Self-efficacy has also been positively linked to the resilience of students in a number of studies (Ozer & Bandura, 1990).

F. Goal Commitment

Tinto (1975) included *goal commitment* as a component in his model, and as early as 1962 Summerskill concluded that *goal commitment* was a critical variable in the attrition process, but that it had not been operationalised or partialled out well in previous models. Knoell (1966) agreed that unrealistic goals were more likely to lead to drop-out than an absence of goals, particularly for those with little intrinsic interest in their subject. Abel (1966) found the highest dropout rates among students whose vocational goals were unrealistic in relation to their academic ability. Trent & Medsker (1968) claimed that persistence was related to the importance students attached to being in college and Kearney (1969) discovered that there was a significant lack of motivation in students identified as being in the wrong level of

institution for their vocational aspirations. Spaeth and Greeley (1970) found that higher expectations for future occupational status correlated with high attainment once academic ability was controlled. Much of the work on goal commitment and motivation is some decades old. There is little contemporary work on the topic and it would appear that the basic principles are well accepted. However, this study will give particular focus to this topic as there is considerable anecdotal evidence in academic discussions that would indicate a perception of a major shift in goal commitment and motivation amongst contemporary students (Brabazon, 2002, pp 128-152).

Social Integration

Tinto's original model of student progress had *Social Integration* as one of its components. In Tinto's model *Social Integration* included the interactions students had with their tutors and fellow students. Much of the emphasis was on the right of passage of the traditional full-time on-campus student. When Kember (1995) developed his model of student progress for open and distance students he had to re-develop the idea of social integration. Most remote students are older than on-campus students and study part-time. They normally have to continue earning a living, so must remain at their current employment. Many have families, and this implies a continuing need for support and obligations to family members. Without relocation, existing social circles continue intact. Remote students do not benefit from strong ties to a campus community but there is still a transition involved—that from non-student to student. Rather than separating from an existing lifestyle the student must build a new role on top of these existing commitments. The success or failure of this integrative process is the main principle of the *Social Integration* component. In this model *Social Integration* has three sub-components; *family support*, *employer support*, and *peer support*.

G. Family Support

Family status has not been convincingly linked with success in or withdrawal from tertiary study. Studies have found that traditional on-campus students living at home with their families are slightly more likely to graduate than those who live in flats by themselves but not as well as those who live in residential colleges (Christie & Dimham, 1991). There are slightly better results for students without children but not significantly. It is no doubt likely that family status would influence remote students more than those studying on-campus as the home is the study environment and the constant obligations and responsibilities of family life cannot be set aside. As far as can be discerned, there is little direct research in this area, and in Kember's 1995 study the major conclusion was that family status was of little significance, although it was significantly correlated with his 'events hindering study' external attribution sub-scale.

However, Kember (1995) did find that it was important for families to encourage enrolment and study. Students were more likely to perceive benefits from programs and the eventual qualification, when families supported the idea. If family members were ambivalent or hostile towards the student enrolling in a course they were prone to seeing studying as competing with other activities. Similarly, if the immediate family saw the qualification as in their interests or something to be proud of, then they were likely to support the student in spending time on study activities, but if the family has perceived family duties as a priority then it was difficult to smoothly integrate periods of study with family life. The general principle in this sub-component is that a supportive family will be willing to make changes to their lifestyle to facilitate the study process. In Kember's 1995 study, children were usually seen as an impediment to study. Childcare was one activity that often took priority over study, particularly when children were young. So, it is logical that a spouse or family member willing to assist

with child care duties to allow time for studying or attending classes would be a very positive factor.

In a number of studies of persistence, insufficient time is probably the most cited reason for withdrawing from a course (Idle, 1980; Kember, 1995; Yorke, 1999, Woodley De Lange, & Tanewski, 2000), and family commitments are very often cited as the reason why time is limited. Kember (1995) saw this reason as a largely external attribution, as a student who had managed a high level of social integration with their study should be able to balance home, work and study. It is probably realistic to assume that many adults enrolling in higher education for the first time underestimate the amount of time degree level study will take and do not always use this as an excuse for their own lack of organisation or motivation.

H. Employer Support

Employment seems to have a mixed effect on success in higher education. There are a number of studies showing that support from an employer for a student's study can have a positive effect, not so much because it aids social integration, but because it fosters a sense of obligation to do well which impacts on a student's goal commitment (Kember et al., 1994b). But at the same time employment is often a significant factor in decisions to drop out as it is a major competitor for students' time. In this model, students begin with a particular employment status and then this follows through into the Social Integration-work sub-component, reflecting the assumed need for students to integrate their work and study well in order to succeed (Bean & Metzner, 1985). From results of previous studies it appears that employment changes—fewer hours, more hours, change of supervisor, transfer, and retrenchment—during study can have a major impact. Such changes while studying are included in the *unexpected events* sub-component in this model.

For remote students, integration with employment depends on the attitude of employers and workmates as well as the students own organisation skills.

Kember (1999) found that there was a great variety in attitude towards employees studying by employers (as related by students). Some were highly supportive and allowed time off work for study of activities such as residential schools. Others were indifferent or even hostile, presumably seeing study as a drain of potential energies which might be devoted to work. The attitude of the employer was found to be important in reinforcing the student's goal commitment and maintaining motivation. It seems logical that a strengthening of extrinsic motivation will occur if the employer makes it clear that successful completion of the course will lead to rewards such as promotion. It has also been found that if students enter their courses knowing that they have strong support from their employer they felt a stronger obligation to do well (Kember 1995, pp 81-84).

I. Peer Support

The principle of this sub-component is that congruence of the study process with the students social life is an important factor in persistence. A hectic social life or social contacts that deride time spent studying would no doubt hinder integration. Kember (1995) found that friends could be an important source of help for students, and the provision of peer group support could do much for motivation as well as assisting understanding in the topic studied. Even for remote students, help, understanding, and motivation can come from fellow students as well as friends. Kember found that in courses that included opportunities to meet together in small groups locally or attend study schools, students were less likely to consider withdrawal (Kember, 1995, p86).

Academic Integration

Tinto (1975) first developed the idea of *Academic Integration* in his work on attrition in higher education. The idea stems from Durkheim's (1961) theory which proposes that suicide is more likely to occur if at least one of two forms of integration is lacking, namely insufficient collective affiliation or insufficient moral or value integration; also referred to as low normative congruence. Transferring this to persistence in study, Tinto saw normative congruence as a fit between the students and the institutions expectations of each other. Universities have formal expectations posed as assignments, tests and examinations. Academic staff members have expectations about these formal expressions that are not necessarily explicitly stated, such as academic argument, referencing, language usage, length, and originality. Institutions have also traditionally had expectations in the form of many subtle norms and conventions.

Tinto (1975) believed that to encourage persistence, both sides should be seeking to develop a sense of belonging between the student and the institution. In the case of remote students, most study takes place at a distance so fostering integration is often seen as a more demanding task than with on-campus students. For the remote student the predominant image of the institution could be formed by the course pack that arrives in the mail, the WebCT online courseware, or the mountain of correspondence from the university administration. Contacts with faculty may not be that frequent and probably takes place largely by e-mail, telephone, video-link, or online chat. As the opportunities for promoting successful integration are fewer each probably take on rather more importance.

The concept of *academic integration* is divided into a number of components in the new model because the academic environment is made up of a number of

facets, and undoubtedly, some students will integrate with one facet but not with another. In some cases the well integrated facet will compensate for a poorly integrated one, but in other facets a lack of integration might be a major influence towards a decision to drop out (Kember, 1995, p 101). The components of *Academic Integration* in the model are: *learning approach* (Marton and Säljö, 1976), that is does the student take a deep approach or surface approach, *motivation* – is the student intrinsically motivated or extrinsically motivated (Ryan & Deci, 2000), *institutional interaction*– do the interactions with the institution led to a positive or negative perception. In Kember's model this latter component was called course evaluation, but with the unitised nature of programs at Australian universities it has been decided to broaden the idea to encompass the student's perception of interactions with the university in general rather just their course contacts. Some more detailed explanation of each of these components follows.

J. Learning Approach

Learning approach was identified by Marton and Säljö (1976) as being one of two discrete types in a study analysing students' performance of normal learning tasks such as reading academic articles. The two approaches identified were *deep approach*, where students concentrate on the underlying meaning of a piece of writing or the underlying purpose of an academic task and *surface approach* where students concentrated on features of the task such as key words or phrases, their intentions being to memorise and reproduce elements that seem appropriate without grasping the principle of the task. Fransson (1977) suggests that learning approaches are not stable psychological traits as are learning styles. Instead the approach adopted depends upon the students' motivation and the prevailing teaching context. Indeed the educator can heavily influence learning approach since a number of variables such as reproductive assessment questions (Thomas & Bain,

1984), formal teaching (Entwistle & Ramsden, 1983) a focus on transmitting information (Kember & Gow, 1994), or excessively heavy workload (Dahlgren, 1978; 1984) have all been shown to make the adoption of a surface approach more likely. Of course, poor study habits, lack of interest or motivation on behalf of the student can also be the cause of taking a surface approach.

Kember & Harper (1987) examined the relationship between attrition and performance and students' characteristics. They discovered that the factor that most strongly discriminated between the persisters and non-persisters was learning approach—that is, students adopting a deep approach were more likely to persist and those who adopted a surface approach were more likely to withdraw. Also Knowles (1984) claimed that there is a strong affinity between the deep/surface dichotomy of learning approaches and the underlying assumptions of andragogy and pedagogy central to adult learning theory. Andragogy recognises the student as capable of self direction and, through experience, of being capable of determining their own learning needs. Pedagogy places responsibility for determining course content in the hands of the teacher and then expects the student to acquire the defined knowledge. The two constructs are not the same but the assumption in the model is that a deep approach is more compatible with andragogical principles (Kember, 1995, p 106). Learning Approach was included in the models of Bean and Metzner (1985), Garland (1993), MacKinnon-Slaley (1994) and Kember (1995). The work of Bean and Metzner and Kember used the Marton & Saljo (1976) concept of a dichotomy between surface and deep level learning approaches. Whereas Mackinnon-Slaney and Garland used a more specific, distance education related concept of learning approach—i.e. whether the learner used an individual or self-directed learning approach.

K. Motivation

Kember (1995) put much store by student *motivation* in his model and found that it was a significant factor in his test of the model. In Kember's model *motivation* is divided into intrinsic and extrinsic components. Intrinsic motivation refers to the interest students have in the subject matter itself or interest in learning for its own sake. If the subject matter gels with the students own interests and career needs then intrinsic motivation will be heightened. Extrinsic motivation is concerned with the student's commitment to obtaining a qualification and is enhanced by situations such as career opportunities, promotions, financial rewards and family pressure (Kember, 1995, pp 108-110). The presence of intrinsic motivation is considered desirable by Kember because it is related to a deep learning approach and both together, he believed, leads to persistence. The two aspects of *motivation* have been maintained and separated as part of the new model—with *goal commitment* included as a component of *Entry Characteristics*, and learning motivation as the *motivation* sub-component of *Academic Integration*.

L. Institutional Interaction

In Kember's model there was a sub-component of *Academic Integration* called *course evaluations*. The terminology here has been changed for two reasons. First, the delivery of courses is changing to ever more unitised structures and delivered in new and varied ways. There is an increasing recognition that both perceptions have real effects and students' complaints have a basis in reality. The attrition process is not just a one-way process, students do not only drop out but can be pushed out too. It has to be acknowledged that institutions make mistakes and that in the dynamic world of contemporary course delivery, we do not always get it right first time. One only needs to consider the disastrous efforts of Columbia University, New York University,

University College University of Maryland and Temple University over the period 2000–2002, where over US\$50,000,000 was spent developing online courses that only attracted hundreds of students instead of the tens of thousands anticipated, to see that mistakes are not uncommon in institutions efforts to espouse online education (Brabazon, 2002).

From the earliest studies the emphasis has been very much on the student and the student's perceptions. The advent of online learning has seen a lot of work done in the area of improving course design. A byproduct of re-thinking the older models of higher education teaching, is the current trend of designing courses with a variety of learning styles in mind. There is also an increased acknowledgement of the institution's role in retention. After all, different institutions do have different retention rates, so one has to assume that there are institutional factors involved. Therefore, the revised model for this study includes institutional interaction and will encompass more than just the student's evaluation of courses. The questions for this sub-component were devised in a focus group of a number of academics and administrative staff of the University of Tasmania in 2002, and were designed with the intention of measuring the potential effects of current institutional practices and procedures on retention.

In the new model, students' grades are considered as part of *institutional interaction*. In Kember's model grade point average (GPA) was a completely separate component and was towards the end of his linear model where, theoretically, students were at a point of making a cost/benefit analysis. In a review of Kember's the research by Woodley, De Lange and Tanewski they found no real reason to add this component to Tinto's original model mainly because they rejected Kember's notion of students cycling through the process each time taking a positive or negative path. For this research, it was decided

to accept this advice and not include GPA as a separate component. However, as grades are part of the interaction between institution and the student, questions on grades have been included in the measurement of this sub-component.

Extraneous and Adventitious Events

A number of external forces are constantly acting on students making study difficult. For remote students those forces are different and probably more numerous than for full-time, on-campus students who are more absorbed in study and the study environment. Environmental factors are highlighted by Bean and Metzner (1985), Garland (1993), MacKinnon-Slaney (1994) and Kember (1995). The *Extraneous and Adventitious Events* component of the new model is divided into three sub-components based on the most common reasons in previous studies, not directly associated with inadequate social or academic integration, given by withdrawing students. These reasons can be categorised as falling in one of the three areas; *distractions*, *unexpected events*, and *changes in circumstances*, and these constructs constitute the sub-components in the new model.

In Kember's (1995) model, 'External Attribution' was the negative side to *Social Integration*. Kember saw external attribution as a result of a student's failure to integrate their social lives with study. The assertion in this current research is that, while this failure does have an affect, external events hindering study can be real and that no matter how well integrated socially or academically a student might be, some external factors are so consequential that they are going to cause withdrawal. Therefore, in the new model for this study, *Extraneous and Adventitious Events* is not the same as *External Attribution*.

Also, there is now evidence that, relying on external factors as reported by the students themselves and filtered through their perceptions is not necessarily questionable. In recent British studies it has been shown that students are often critical of themselves and their own part in their lack of progress.

McGivney (2003) found that typically, students asked why they left a course gave reasons which related to their own inadequacies or capacities ('I couldn't do the work', 'I couldn't keep up', 'I couldn't cope with work and study' were typical responses) rather than deficiencies of the course, or its environment.

M. Distractions

The appeal of alternative attractions or the problems of unanticipated distractions cannot be underestimated. However well taught or interesting a course, it may not be able to compete with other attractions—after all, learning is rarely easy, and often entails hard work. One would have to argue that good social and academic integration should be able to tolerate a high level of distraction. However, some distractions can be difficult to overcome; ongoing problems with government agencies regarding financial support, parallel enrolment at another institution, as well as typical displacement behaviour such as housework or computer game playing, were cited examples in previous studies. Distractions that are ongoing rob remote students of their limited time and can have a domino effect when combined. Also, as it is possible to detect a pattern of attrition—such as most students dropping out in the early weeks of a course—it appears too, that any breaks in study (mid-year vacation, end of year, or bad weather) or assessment deadlines have an impact. These breaks in the rhythm of study could be seen as distractions (McGivney, 2003).

N. Unexpected Events

Although it is hard to generalise from the research, certain patterns do emerge and the following unexpected events are common reasons given by students who do not complete: change of domestic or employment circumstances; financial problems; illness or poor health of themselves or a family member, difficulties with child care or care of other dependants, transport, travel or access problems. There is probably little that institutions can do to ameliorate the effect of these events except to ensure students are aware and have procedures in place that allow for legitimate difficulties facing remote students, without compromising the academic integrity of courses. Also, as there is really no doubt to the multi-causal nature of attrition, very good academic and social integration might allow a student to ride out a difficult time.

O. Change in Circumstances

Changes in circumstance are perhaps the most tangible of the extraneous and adventitious factors that can influence a student's progress. Sometimes students are unaware themselves that such changes as moving house, a change partnership or marital status have exerted stress and disrupted study patterns. However, the impact of these and other changes in circumstances has been reported in a number studies (McGivney, 2003) and is included in the new model for this study.

SUMMARY

A number of models of attrition/student progress have been developed over the last three decades. Models specific to distance education emerged in the 1980s. Most previous models have concentrated on specific aspects of the educational process or specific characteristics of the students. The most comprehensive distance education model to date was developed and tested

by Kember in 1995. As part of this current study a revised model, partly based on that of Kember was devised. The new model includes some additional components and makes some different assumptions about the interactions of those components. The aim of the new model is to better characterise the attrition/retention process and to take up Kember's own challenge implicit in his statement that:

...hopefully the process of testing and adoption of the model will lead to new insights which can be incorporated into new and better models (Kember 1995, p 221).

Chapter Four

METHODOLOGY

For this study the research problem was ‘why is attrition in distance education so high and how can the phenomenon be better understood’. The aim therefore was to design an explanatory study that would also act as a test of a new integrated conceptual model, the development of which was described in the previous chapter. The methodology had to be appropriate for answering the six research questions. These questions as already stated were:

- What were the general characteristics of the students in the study?
- Did the factors in the model developed for the study correlate to student persistence, and does the new model have any predictive capability?
- What were the principle reasons for withdrawal (from the student’s perspective)?
- To what extent did the reasons given by students for withdrawal diverge from those given by students 20 years ago?
- What generalisations can be made about the character and experience of studying by distance education today?
- Are there any differences between the attrition of students studying principally online, versus those in mainly traditional correspondence (print-based) courses.

This research was principally a correlation study conducted using survey methods. There were four aspects to the study; (1) the collection of

demographic and situational data and data to measure the variables derived from the constructs in the model; (2) a test of the model; (3) a retrospective analysis and comparison with a related 1986 study; and (4) the collection of qualitative data to enrich and illuminate the findings and assist with the analysis of the results. The sample of students for the study was drawn from those enrolled as remote students at the University of Tasmania at the beginning of 2003.

The remainder of this chapter further details the methodology and data collection undertaken. It is divided into four main sections; *Methodological Approach*, *Research Design*, *Sampling and Data Gathering*, and *Instruments and Measures*.

I. METHODOLOGICAL APPROACH

In choosing the methods for the study, the appropriateness of those most commonly used by researchers in the literature was assessed while being mindful of a report by Phipps and Merisotis (1999) which included a summary of the shortcomings of research in distance education to date. The literature reveals some exploratory and descriptive studies in the area, but as the research questions for this study go further than requiring just description, it was decided that correlation research would be appropriate, achievable and useful. As the cause of any single case of withdrawal would have a number of causes or at least a number of factors influencing a decision, a study attempting to determine cause and effect with regard to attrition would be extremely difficult and possibly spurious.

A mixed, compensatory or 'triangulated' methodology using empirical methods appropriate for a correlation study for the quantitative part of the

research and an appropriate social science approach for the qualitative part of the study was used for three main reasons. First, in a non-experimental study, especially investigating some form of complex human behaviour it is difficult to exclude extraneous variables. By using triangulation this likelihood could be lessened (Berg, 2008). In addition, a triangulated study had the potential to reveal any errors in the deductive process that went into the construction of the model, and perhaps give some clues as to how to improve the theory (Erzberger & Prein, 1997).

The second reason was that a major weakness of traditional hypothesis testing is that any observable result can potentially support multiple, sometimes conflicting theories. Therefore, a researcher can never prove a theory, nor assert they have determined the causation of a phenomenon (Gall et al., 1996, pp 9-15). By triangulating the study it was hoped it would be possible, in addition to making a judgement about whether the theory was supported, to make some propositions about the reasons behind the results. This type of mixed methodology is by no means new to the field. Kember (1986, 1987, 1991, 1992, 1995) used it, as did Tinto (1975, 1983, 1987) and Bajtelsmit (1988).

Lastly, as a pragmatic perspective was being used, it was decided to take a more pluralistic, compatibilist approach choosing a combination of methods and procedures that might work best for answering each research question. It seemed obvious that some research questions, such as 2, 3, 4 and 6 were better suited to traditional quantitative research where the focus is on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardised data collection, and statistical analysis (Johnson & Onwuegbuzie, 2004), while others, namely 1 and 5, were candidates for qualitative research, where the emphasis is on induction, discovery, exploration, theory/hypothesis generation, and qualitative analysis (Johnson & Onwuegbuzie, 2004). Using a

mix of methods allowed the collection of multiple data were likely to result in complementary strengths; and it was thought that if findings were corroborated across different approaches then greater confidence could be held in the singular conclusion, or if the findings conflicted, then greater knowledge might result and allow more informed interpretations and conclusions.

The Quantitative Component

As some of the research questions had an explanatory and predictive purpose, and a theory had been posited, a quantitative component was thought to be both appropriate and necessary. The theory requiring testing was essentially contained in the integrated conceptual model developed through an inductive process (previous chapter). The model is in effect a number of tentative propositions about the relationship between five main theoretical constructs. The observable consequences of the propositions contained in the model would be the statistical relationship between the constructs. To test this proposition it was necessary to collect empirical data about the students and determine whether the data fitted with the assumptions contained in the model. If the data fitted the model, the model should have a predictive capacity that could be calculated through accepted statistical inference procedures.

Traditional hypothesis testing such as this has a particular weakness. The researcher may deduce inappropriate observable consequences from the hypothesis and as a result make an inappropriate test of the hypotheses (Gall et al., 1996, pp 6-8). Therefore, in this research, care has been taken to base the constructs and the quantitative expressions of the constructs (the variables) on previous work, either in the same field or taken from closely related areas of education research, by multiple researchers. That is, the combination of the

constructs in the model is new, but the constructs themselves are well established.

For the quantitative study the following assumptions were made:

- There would be a correlation between components of the model and persistence. The assumptions in directional terms were that some of the components of the model—entry characteristics, social integration and academic integration would be positively correlated with persistence whereas extraneous and adventitious events would be negatively correlated.
- The model would have a predictive capacity in that it would indicate precursors affecting the probability (risk) of persistence or withdrawal.
- There would be differences between the reasons for withdrawal today compared to 20 years ago. There were no directional assumptions regarding the reasons for withdrawal between the new study and the 1986 study (the research was designed to reveal the type of correlation if any).
- There would be differences between students taking online courses compared to those taking traditional correspondence (print based) courses. In directional terms it was assumed that attrition would be less in online courses compared to print based courses.

The principal approach for analysing the data gathered for the quantitative component was correlation analysis. A number of correlation coefficients were used to gauge the level of correlation between each of the constructs in the new model developed for the study and persistence as manifested in the sample of students in the study. Most of the constructs were measured using an ordinal scale and mostly non-parametric correlation coefficients were used to measure the correlation of these items with persistence (Townsend and

Ashby, 1984; Singleton & Straits, 1999), although parametric coefficients were also calculated and reported for reference purposes. The overall fit of the model was determined using linear regression techniques (the coefficient of determination [R^2] was calculated), and a factor analysis using principal axis factoring was undertaken on the quantitative responses to explore the underlying factor structure (Meyers, Gamst & Guarino, 2006).

The Qualitative Component

Two of the research questions had the aim of describing, characterising and explaining certain phenomena in the realm of distance education. As it was hoped to formulate certain propositions and identify emergent relationships by studying the phenomena, it was decided to use, for the qualitative part of the study, a pragmatic approach influenced to some extent by the phenomenologists and ethnomethodologists. Phenomenology refers to an established methodology for the study of subjective experiences and is characterised by a focus on 'encountering' and the reflective, evidential, and descriptive aspects to both encounterings and the objects or phenomenon as encountered (Langridge, 2006; Giorgi, 1997 & Shapiro, 1985).

Ethnomethodology could be described as the systematic study of the ways in which people use social interaction to make sense of their situation and everyday lives (Garfinkel, 2002, p 6). Both approaches are based on the philosophical reflections of Husserl (1901). Their techniques are well developed and fit with the main aim of the aim of the qualitative component of this research, which was to understand the respondents' reasons, experiences and explanations.

In this thesis the aim of using a pragmatic approach was to capture information on the students' subjective views and experiences as distance learners, that is to report the results from the perspective of the participants

own perceptions using their own words, endeavouring to provide an insider's view; and then transform these views to intersubjective understandings that could be used to reflect upon possible explanations of the results in the quantitative part of the study.

The main approach for analysing the data in the qualitative component of the study was thematic analysis. Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data. It organises and describes a data set in detail, and frequently goes further than this by interpreting various aspects of the research topic (Braun & Clarke, 2006).

Themes or patterns within data using thematic analysis can be identified in two ways. Either an inductive or 'bottom up' approach (Patton, 1990) or a theoretical, deductive or 'top down' approach can be used (Boyatzis, 1998; Hayes, 1997). In this study both approaches were utilised. Initially, an inductive approach was undertaken for the dataset as a whole. The themes identified were strongly linked to the data themselves, and those that were identified bore little relation to the specific items in the questionnaires. The process of coding the data was undertaken without trying to fit it into any pre-existing coding framework. The principal analytical tool used for this inductive part of the study was a case ordered matrix developed using computer assisted thematic analysis (Miles & Huberman, 1994).

In addition, a 'theoretical' thematic analysis was undertaken. This analysis was driven by the research questions and focused on providing a rich description and detailed analysis of certain aspect of the data, such as the reasons given for withdrawal, and the components of the model developed for the study. Overall, the thematic analysis focused on the data primarily at the semantic level (Braun & Clarke, 2006), whereby, the themes were

identified within the explicit or surface meanings of the data/responses of the students with an emphasis on that which the participant had expressed or written. The data were organised to show patterns in semantic content and then the analysis progressed from the simply descriptive, to a summary and interpretation. After which, there was an attempt to theorize the significance of the patterns and their broader meanings and implications in relation to previous literature.

Data Collection

The literature review for this thesis study examined numerous studies of persistence in higher education and many on the topic of persistence in the distance education area. Certain shifts in research type and method were discernable. In the 1960s much of work was theoretical and based on anecdotal evidence, in the 1970s there were a number of case studies, many studies using existing enrolment data and some surveys. By the 1980s enrolment data or surveys were commonplace and during the 1990s surveys alone, or in combination with enrolment data, were the norm. Most of these surveys used either a questionnaire or structured interview schedule. Indeed, looking at the research, a corpus of useful, validated instruments has been developed over the last twenty years. Because of this ready to hand resource and also because there was no option to analyse secondary data gleaned from institutional records, it was decided to use the survey approach basing the survey instruments largely on those of previous studies.

The literature also showed a dearth of longitudinal studies, in fact the majority of studies in the field were ex post-facto studies. Phipps and Meritsotis (1999) recommended that one of the most valuable additions to much of the existing research would be the extension of the research period. A two year period was decided upon because it would capture data for two

levels of study for some students, and it was not so long as to weary students of the process and potentially cause reactive effects. Also, two years gave a reasonable number of students in pairs of years throughout the normal span, 1st and 2nd, 2nd and 3rd, 3rd and 4th etc. Because the study was longitudinal and the experiences of the students themselves were the main focus of the research, it was decided to make the research a panel study. A panel study involves selecting a sample at the outset of the study, and then at each subsequent data collection point, surveying the same sample (Gall et al, 1996, pp 378-379). By conducting a panel study it was possible to measure changes in specific individuals over time and therefore explore and contrast the actual education process not simply the inputs and outcomes.

II. RESEARCH DESIGN

Once it was decided to collect data through survey methods, the most feasible survey approach—questionnaire or interview, or both— had to be ascertained. A questionnaire was decided upon as it permits one to gather information from a large sample of people relatively quickly and inexpensively. It is acknowledged that a mailed (self-administered) questionnaire, with the appropriate design has the advantage of guaranteeing anonymity and a degree of confidentiality, and as a result, has a good record of eliciting truthful responses (Burns, 2000). Also, as the potential participants in the study were, by the very nature of the topic, widely spread geographically, it was the best option for gathering data over a relatively short time.

The type of data needed—attitudes, feelings, experiences—was not readily observed or obtainable without the full participation of the subjects, and a self-administered questionnaire had the advantages that respondents were

free to answer at their leisure, possible embarrassment was almost entirely eliminated, and verbal and physiological cues from the questioner were not an issue (Burns, 2000). However, this approach has its limitations. More questions are left unanswered than with interview methods, and there is no opportunity to clarify questions or to probe for more adequate answers (Jenkins & Dillman, 1995). These inadequacies of self-administered questionnaires were partly overcome by designing the survey as a panel study. This allowed some aspects of the responses given on one questionnaire to be teased out in the next questionnaire. Also, knowing that self-administered questionnaires often have a poor response rate (Singleton & Straits, 1999), it was decided to offer the option of filling out the questionnaire online, and also, to give telephone reminders to participants not returning their questionnaires by the due date.

Other Design Considerations

Reactive effects, that is, the phenomenon of the act of data collection affecting the items on which the researcher wants to collect data, are a consideration in a range of social science studies. Research design is considered a major factor in managing and minimising reactive effects. There are a number of reactive effects of which researchers need to be aware. For example, one commonly discussed reactive effect is the *Hawthorne Effect*, which refers to increased interest, motivation, or participation on the part of subjects simply because they are being observed (Gall et al., 1996, pp 475-478). Also, the *John Henry Effect*, refers to individuals feeling threatened or challenged by being in competition with a new program or approach and, as a result, outdoing themselves and performing well beyond what would normally be expected.

This phenomenon of subjects' responses being influenced by their awareness of being studied, is often problematic in experimental studies. However, the

effects have also been apparent in varying degrees in survey research. (Singleton & Straits, 1999). Even though one could perhaps argue that contemporary higher education in Australia, is so dynamic, and change and scrutiny so common, a fear of reactive effects could be problematising the issue. Nevertheless, it was decided that there was some possibility that the design of this study could produce reactive measurement effects, efforts made to reduce any possible effects in a number of ways. These included: trying to determine the least intrusive or influential time in the semester to collect the data, ensuring students were aware that this was doctoral research and completely independent from influence by the institution (i.e. the students were not being surveilled) and the individual's responses were completely confidential.

III. SAMPLING AND DATA GATHERING

Sample Selection

Fresh data were gathered for this study. Even though the institution at which the participants were enrolled collects an amount of information on students (information such as basic biographical data, other data on such topics as ethnicity, previous education, and of course, information on academic progress), this was not used. This data had been previously gathered for a specific purpose and there are resulting legal and ethical restrictions, as well as University policies, preventing the use of such information. Aggregated data on students which was publicly available would not have been of very much use for this study, particularly as it is was not broken down by distance and non-distance students, and has no attitudinal aspect to it.

At the institution at which the participants were enrolled, students optionally register with the library as remote students to gain some extra services. This

service is restricted to students who live more than 40 km from one of the two main campuses of the institution. The registration data includes their name, postal address and student status (undergraduate, postgraduate) as well as other administrative data. For this study, the University Librarian was approached to see if he would consider allowing a mail-out asking these students to participate in the study. The request was accepted under the conditions specified in the study's ethics approval process (see Appendix B).

Ethical Considerations

A proposal was put to the University of Tasmania Ethics Committee to ascertain whether this information could be used as a way of identifying and soliciting potential subjects. The committee gave approval of the plan provided the following constraints were adhered to:

1. The University Librarian had to give permission using the normal criteria for approval as any applicant applying to use data for research;
2. The data file containing names and addresses would be kept confidential and would only be used to make the initial contact and would not be used when coding or analysing data.
3. The research would only use information given voluntarily by the participants in the surveys.
4. Subjects had to opt in to the research project, and had to know that they could opt out at any time.
5. Subjects had to know that participation or non-participation would not have any influence on their interactions with the university.

These restrictions have been adhered to and the project received ethics approval in February 2003.

To ensure compliance with these conditions, provide an ethical framework and ensure the maximum return rate of questionnaires, it was necessary to both ensure confidentiality and provide an assurance of confidentiality. As some aspects of the attitude section of the survey are quite intrusive—questions such as those about income and those requesting a personal assessment of abilities, are notoriously sensitive in Australian culture—it was thought that the respondents would give truthful answers if confidentiality was assured. This was an issue because complete anonymity was not possible. The respondents had to be identified to the researcher for two reasons. First, it was necessary to identify those who had continued in their course and those who had discontinued, and second, it was useful to be able to compare the responses to questionnaires and interviews of individual subjects over time. This requirement was addressed by giving each participant a code and keeping the contact details and questionnaire response data completely separate.

The Sample

The potential sample for the study consisted of the 460 students who registered as 'remote' students in the library's database (and were not on the register under an exempt non-remote category). As registration is voluntary, the register, in all likelihood, did not include all remote students. However, it probably did contain the vast majority, as the advantages of being on the register are considerable and the service is well publicised. Thirty students in the potential sample were enrolled in short courses. This reduced the potential number for the study (as a possible panel study) to 430, and this was the number of students that received the initial mail-out.

Two hundred and thirty-seven students replied to the initial mail-out stating that they would be willing to participate in the study. Two hundred and

twenty-eight returned both the first and second questionnaires and 221 returned all of the first three questionnaires. A total of 213 participants returned all four questionnaires, but three of these asked not to have their data included in the study. Only the data for those who returned all four questionnaires, and agreed to be included, were used for the study— giving a total sample of 210. During the study several hundred more students enrolled and registered as being ‘remote’, but it was decided to use only those who agreed to participate in the first mail-out, as the procedure would become overly complicated and it would no longer constitute a panel study.

The final sample was therefore a convenience sample (Wright, 1997, p 10). It was decided to accept this as it was really the only feasible method of gaining access to an acceptable number of remote students. Because the number who responded and were willing to participate was manageable and also statistically viable, there seemed little point in further reducing it through random selection or some other process.

Data Collection Process

The first contact with potential student participants was made by mail as described above. The option of continuing the survey by email was considered, but response rates using email have been shown to be unpredictable as email is easy to reply to but also easy to ignore (Fowler, 2002), so it was decided to continue with mailing printed questionnaires but give students the alternative of online forms.

An often encountered difficulty in survey studies is the reluctance of many subjects to take the effort to complete the survey and return it. However, certain strategies and careful attention to questionnaire design can sometimes secure response rates of over 90% (Burns, 2000). To maximise the response in

this survey, not only was the format and number of questions carefully considered, but each mail-out included a letter politely asking for prompt return, and a pre-paid, return addressed envelope.

However, in this type of panel study where the same people are sent a number of questionnaires over time, many participants come to suffer from questionnaire fatigue and forget to return questionnaires unless prompted (Fowler, 2002). It was therefore decided to make a prompting telephone call to everyone who did not return a questionnaire (other than the initial one), and the participant was given the option of completing the questionnaire, verbally, over the telephone.

The timing of sending the questionnaires was carefully considered, with the aim of both maximising the response rate and minimising any reactive effects. The mid-year and summer breaks were considered but it was thought that this might reduce the response rate, particularly amongst those who had withdrawn, and it might be difficult to contact students, particularly during the summer break. Also, it was thought the early administration of the questionnaire was necessary as a high proportion of withdrawals from distance education courses occur at an early stage (McIntosh, Woodley & Morrison, 1980).

It was decided to send the questionnaires six weeks into the semester when students should be oriented enough not to find the questionnaires too distracting, but with plenty of time ahead so as not to feel stressed or pressured. Also it was felt that this gave at least some time for opinions to be formed and patterns of study to be established. The scheduling of the questionnaires is detailed in Table 4.1. The first questionnaire was sent out six weeks after the beginning of the first semester 2003. There were no follow up

prompts for the first questionnaire. The second questionnaire was sent six weeks into semester 2, 2003. The third questionnaire was sent at the same time during semester 1, 2004. The fourth questionnaire was sent towards the end of semester 2, 2004. This change in timing was made to achieve an accurate result regarding which students were completing, continuing or withdrawn. Two versions of questionnaire (4) were sent. One version was sent to students who had not reported as still studying or graduated on the previous questionnaire and another version to students who had reported as being withdrawn on the previous questionnaire.

Table 4.1 Schedule of Questionnaire Dispatches

Questionnaire No.	Sent To	Time Sent
Questionnaire (1)	All potential students	Mid-semester 1, 2003.
Questionnaire (2)	All students in study	Mid-semester 2, 2003
Questionnaire (3)	All students in study	Mid-semester 1, 2004
Questionnaire (4)a Questionnaire (4)b	Continuing/graduating students Discontinued students	End of semester 2, 2004

Delimitations of the Study

The study investigated only the experiences and characteristics of students enrolled at the University of Tasmania and registered with the University of Tasmania Library as remote students. Only students enrolled in courses of at least two years part-time duration were included in the full study (students enrolled in shorter courses were included in the pilot study). The research took place over four semesters spanning two academic years—the first and second semesters of 2003 and first and second semesters of 2004.

IV. INSTRUMENTS AND MEASURES

The Questionnaires

In this study the questionnaires were composites of a number of instruments used on a number of previous studies and in several different institutional settings (Osborne, Kilpatrick & Kember, 1987; Bajtelsmit, 1988, Kember, 1995; Yorke, 1997; Kennedy, 2001; Woodley, 2001). Evidence of the validity and reliability of most of the items in the questionnaires can be found in the previous studies. As they were being used in a slightly different context, some re-checking for validity was undertaken during a pilot study. The questionnaires also contained some additional elements peculiar to this study formulated using a focus group of University of Tasmania staff.

The questions and format of the first questionnaire were piloted on a group of 30 students enrolled in graduate certificate programs. These students were not included in the study (as the period of their enrolment was too short) nor were the results from this initial data collection recorded. However, in light of the responses of the pilot group, a number of minor changes were made to the instrument and the amended questionnaire was then sent to the remaining 430 students who were enrolled in programs of at least two years part-time duration.

The first questionnaire was designed for a number of purposes; first it was necessary to get basic demographic and background information from the participants. The study also required entry characteristics such as educational background and computer experience. In addition, the questionnaire contained items aimed at obtaining early attitudes to studying as a remote student and studying generally—particularly whether they had a tendency for deep learning or take a surface approach, and items designed to determine

the goal commitment and motivation type of the student (some of the model factors). The subsequent questionnaires were designed to further refine the categories into which each student could be placed and capture their experience of and feelings and attitudes towards their experience of studying as a remote student. Also, and importantly, the subsequent questionnaires were designed to elicit from participants whether they had withdrawn, not re-enrolled, were continuing, had completed their course (program) requirements, had deferred, or had opted out of the study. Additionally, the reason for their withdrawal, if they had done so, was also requested. The full text of each of the questionnaires sent out to participants is included in Appendix A.

Demographic and Situational Data Collection

Demographic information is easy to obtain and is often included as variables in educational research. In some educational studies demographic data is essential and produces major insights into phenomena. However, in higher education research on student success or performance, gender and age have been of minor importance, and more specifically, demographic data has been of little value in studies of success of higher education students in distance and open courses, both in correlation studies and predictive model testing. (Dille & Mezack, 1991; Wilson, 2007; Yukselturk & Bulut, 2007). Therefore, demographic factors were not included in the model. However, demographic and situational data were collected in this study because one of the research questions involved characterising the students, and it was thought the information would prove valuable in building up a picture of the type of students enrolling in courses offered by distance. This information could in turn be used when making assessments regarding the generalisability of the results.

The first part of the initial questionnaire contained questions regarding age and gender, and background questions such as: employment status, study mode (off-campus student, part-time student, full-time), number of years of university level coursework they had already completed, the average grade they thought they had received in any university level work completed so far, in which course they were enrolled, what was their major subject, the number of units were they enrolled in for the current semester, how many online (using WebCT or similar) units were they taking, had they completed any online units prior to this semester, how many traditional (print based) distance education units were they taking, had they completed any distance education study in the past, and were these the first university level units they had taken in this subject.

The following sub-sections detail demographic and situational data collected, how the questions were phrased and the response categories or options from which the students could choose.

A. Age

The age categories (*Table 4.2*) selected corresponded to the age categories used in the Australian Commonwealth Department of Education, Science and Training's attrition studies.

Table 4.2. Age Categories

19 or under
20-24
25-29
30-34
35-39
40-49
50-59
60 or over

B. Gender

Respondents were asked to state their gender and had the standard options of 'male' or 'female' as responses for this question.

C. Employment

Respondents were asked about their employment on each questionnaire. On the initial questionnaire they were asked about their unemployment status and on subsequent questionnaires they were asked if it had changed. They had three options for responding: 'not employed or retired', 'part-time' or 'full-time'.

D. Marital Status

On the initial questionnaire participants were asked their marital status. They were given the standard options of 'Single', 'Married', 'Defacto', 'Divorced' or 'Widowed' with which to respond. In subsequent questionnaires they were asked if their marital status had changed.

E. Number of People in Household

On the initial questionnaire participants were asked to state the number of people in their household as a total and the number of children and adults. They were simply given a space in which to write a number. In subsequent questionnaires they were asked if the number of people in their household had changed.

F. Income

Information on the income of the participants was gathered by asking them to choose one from eight categories into which their income fell. This question was asked in the first questionnaire and in subsequent questionnaires respondents were asked if their income had changed and if so into which category did it now fall. The eight categories are listed in *Table 4.3*.

Table 4.3. Income Categories (\$ per week)

<\$100
\$100-150
\$151-200
\$201-300
\$301-350
\$351-400
\$401-450
>\$450

G. Study Mode

In the initial questionnaire, participants were asked whether they studied ‘fully off-campus’ or attended in ‘mixed mode (at least one unit off-campus and at least one other on-campus)’. In subsequent questionnaires participants were asked to decide between these options or a third option giving them the opportunity to state if they had changed to fully on-campus.

H. Program (Course) Level

In the initial questionnaire students were asked to state the level of the courses they were studying. They were given the options in *Table 4.4* to which to respond. In subsequent questionnaires students were not asked this question.

Table 4.4. Program Level Response Options

Two Year (Associate degree/Diploma)
Bachelor
Graduate Diploma
Master
Doctorate

I. Field of Study

In the initial questionnaire students were asked to specify the major field of study in their program. They were given the options in *Table 4.5* with which to respond.

Table 4.5. Major Field of Study Response Options

Humanities
Social Sciences
Science and Engineering
Business
Health Sciences
Education
Law
Undecided/General

J. Study Load (average number of units per semester)

On each questionnaire respondents were asked to state how many units they had enrolled in. At the end of the study an average number of units per semester was calculated for each student and depending on the results each student's average load was categorised into one of the six categories in *Table 4.6*.

Table 4.6. Study Load Categories

Category	Average Number of Units/semester
1	0-.09
2	1.0-1.4
3	1.5-1.9
4	2.0-2.4
5	2.5-2.9
6	3.0+

V. THE CONSTRUCTS—MODEL FACTORS AND SUB-SCALES

The questions were grouped according to the sub-scale categories in the Model for the study—they were not grouped in this way in the questionnaires. The examples show the way the questions are used to build up measures for the sub-scales. The method of construction of the scales was based on principles put forward by Dawis (1987). The questions used standard Likert scale options for responses.

Entry Characteristics

The factor of ‘Entry Characteristics’ was comprised of six sub-scales. The sub-scales were: *Educational background, computer experience, preparation, attitude to online and distance learning, self-efficacy, and goal commitment.*

A. Educational background

The sub-scale of academic experience comprised two questions. The aim was to simply but effectively produce a score accurately reflecting the amount of study undertaken weighted by level. The marks, standard attained or successful completion were not factors in the sub-scale. Table 4.7 contains an explanation of the scoring.

Table 4.7. Educational background Sub-Scale Composition

Number of Items	2	Number of Values (n)	210
Factors (Responses to 2 items each loaded equally – 50%)		A1) Highest level of education prior to enrolment. A2) Number of years of university level study you have completed (prior to this semester).	
Scoring Options:	Question A1	1 = Grade 10 or less 2 = Grade 11 or 12 3 = TAFE 4 = University	
	Question A2	0 = none 1 = 1 2 = 2 3 = 3 4 = greater than 3	
Method of Computing:		Sum of the scores of both items	
Range of Possible Values:		1 to 8	

B. Computer Experience

To ascertain a student's computer experience the questionnaires included ten computer related items. The possible range of values for this sub-scale was 10 to 40. Table 4.8 shows the details of the composition of the sub-scale score.

Table 4.8. Computer Experience Sub-Scale Composition

Number of Items	2	Number of Values (n)	210
Factors (Responses to 10 items each loaded equally - 10%)	B1) I check my email. B2) I use a word processor. B3) I use a spreadsheet or database program. B4) I play computer games on my own computer (or a friend's). B5) I play games on the Internet. B6) I access the Internet for school or work. B7) I access news, weather, sports, stocks, etc. online. B8) I access the Internet for fun (other than games). B9) I participate in online chats. B10) I participate in online conferences or bulletin boards.		
Scoring Options: All Questions B1-B10	1 = Never 2 = Seldom 3 = Weekly 4 = Daily		
Method of Computing:	Sum of the scores of all items		
Range of Possible Values:	10 to 40		

C. Preparatory Course

The first questionnaire asked whether the students had done a preparatory course of some kind organised by the university. For the purposes of analysing the results in SPSS, the value of 0 was assigned to 'no' and 1 to 'yes' Table 4.9 details the treatment of the sub-scale.

Table 4.9. Preparatory Course Sub-Scale

Number of Items	1	Number of Values (n)	210
Factors (Responses to 1 question – loading 100%)	C1) Have you undertaken any preparatory courses organised by the University?		
Scoring Option: C1	0 = No 1 = Yes		
Method of Computing:	Rating as for scoring option		
Range of Possible Values:	0 to 1		

D. Attitude to Online Learning

Four statements were used to measure students' attitude to online learning. The possible range of values for the sub-scale was 4 to 16 (*Table 4.10*). The questions were based on an instrument devised by Kennedy (2001).

Table 4.10. Attitude to Online Learning Sub-scale Composition

Number of Items	4	Number of Values (n)	210
Factors: <i>Responses to 4 items each loaded equally (25% each)</i>	<i>D1)</i> I enjoy using the internet as a learning tool. <i>D2)</i> I enjoy participating in online chats or conferences with people I may not know. <i>D3)</i> Online courses are a good alternative to classroom-based courses for people who can't get to the campus. <i>D4)</i> Most university students could learn as much in an online course as in a classroom course.		
Scoring Options: All Questions (D1-D4)	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree		
Method of Computing:	Sum of the scores of all items		
Range of Possible Values:	4 to 16		

E. Self-Efficacy

In an effort to measure self-efficacy, a sub-scale of four statements was developed. These had a possible and observed range of 4 to 16.

Table 4.11. Self Actualisation Sub-scale Composition

Number of Items	4	Number of Values (n)	210
Factors: <i>Responses to 4 items each loaded equally (25% each)</i>	<i>E1)</i> I am self-reliant. <i>E2)</i> I am well organised. <i>E3)</i> I am resilient. <i>E4)</i> I don't need formal classes to learn.		
Scoring Options: All Questions (E1-E4)	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree		
Method of Computing:	Sum of the scores of all items		
Range of Possible Values:	4 to 16		

F. Goal Commitment

Goal commitment was measured by a group of ten statements (listed in *Table 4.12*). The possible range of results was 10-40.

Table 4.12. Goal Commitment Sub-Scale Composition

Number of Items	10	Number of Values (n)	210
Factors: (Responses to 10 items each loaded equally - 10%)	<i>F1</i>) I've always wanted to get a university degree. <i>F2</i>) I think it's important to have a degree to get a job. <i>F3</i>) I think studying for a degree makes you a more rounded person. <i>F4</i>) I know what I want out of studying. <i>F5</i>) I am determined to finish. <i>F6</i>) The financial outlay makes it important for me to finish. <i>F7</i>) I really want to achieve my goal of graduating. <i>F8</i>) I don't want to let others down. <i>F9</i>) I want to see if I am capable of doing it. <i>F10</i>) I think it's a social advantage to have a degree.		
Scoring Options: All Questions (<i>F1-F4</i>)	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree		
Method of Computing:	Sum of the scores of all items		
Range of Possible Values:	10 to 40		

Social Integration

The social integration scale consisted of three sub-scales: *family support*, *employer support* and *peer support*.

G. Family Support

The family support sub-scale as detailed in *Table 4.13* included responses to five statements and had a possible range of values of 5 to 20.

Table 4.13. Family Support Sub-Scale Composition

Number of Items	5	Number of Values (n)	210
Factors (Responses to 5 items each loaded equally - 20%)	G1) My family encouraged me to enrol. G2) My family has really helped me. G3) My family supports my studying because they think the qualification is important. G4) My spouse gives me support in my studies. G5) My spouse becomes annoyed when I spend too much time studying.		
Scoring Options:	Questions G1-G4	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree	
	Question G5	4 = Strongly Disagree 3 = Disagree 2 = Agree 1 = Strongly Agree	
Method of Computing:		Sum of the scores of all items	
Range of Possible Values:		5 to 20	

H. Employer Support

The sub-scale of *employer support* consisted of only three statements. The possible and observed range for the sub-scale score was 3 to 12. Table 4.14 details the composition of the construct.

Table 4.14. Employer Support Sub-Scale Composition

Number of Items	3	Number of Values (n)	210
Factors (Responses to 3 items each loaded equally - 33%)	H1) My employer encouraged me to enrol. H2) My employer has really helped me. H3) My employer has been supportive of my study.		
Scoring Options: All Questions (H1-H3)	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree		
Method of Computing:		Sum of the scores of all items	
Range of Possible Values:		3 to 12	

I. Peer Support

The peer support sub-scale was made up of three statements (as in *Table 4.15*).

The range of values for the sub-scale was 3-12.

Table 4.15. Family Environment Sub-Scale Composition

Number of Items	3	Number of Values (n)	210
Factors (Responses to 3 items each loaded equally - 33%)		/1) My friends encouraged me to enrol. /2) My friends encourage me with my study. /3) I feel I'm neglecting my friends when I study rather than go out.	
Scoring Options:	Questions /1-/2	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree	
	Question /3	4 = Strongly Disagree 3 = Disagree 2 = Agree 1 = Strongly Agree	
Method of Computing:		Sum of the scores of all items	
Range of Possible Values:		3 to 12	

Academic Integration

The Academic Integration Scale included three sub-scales; Learning Approach, Motivation Type and Institutional Interaction.

J. Learning Approach

The learning Approach sub-scale consisted of 18 statements (see *Table 4.16*).

The range of possible scores for the sub-scale was 18-72.

Table 4.16. Learning Approach Sub-Scale Composition

Number of Items:	18	Number of Values (n):	210
Factors: (Responses to 18 items each loaded equally – 5.55%)	<p><i>J1)</i> I do my reading and preparation regularly.</p> <p><i>J2)</i> I keep up with the assignments for my courses.</p> <p><i>J3)</i> I am good at motivating myself to study regularly without being reminded by my teacher or someone else.</p> <p><i>J4)</i> After taking a test, I like to check to see if I did some of the difficult problems correctly.</p> <p><i>J5)</i> I benefit from working with other students in the class.</p> <p><i>J6)</i> I meet with other students to study.</p> <p><i>J7)</i> I communicate with other students by phone or email about the course work.</p> <p><i>J8)</i> I like to explore a subject in more depth than what is required by the lecturers (extra reading, online study, talk to other teachers, etc.).</p> <p><i>J9)</i> I ask questions in lectures, study schools or using Internet chat.</p> <p><i>J10)</i> I volunteer to answer questions in tutorials/study schools.</p> <p><i>J11)</i> I meet with my lecturers on campus about the unit.</p> <p><i>J12)</i> I try to let my lecturers/teachers know something about me as a person, such as my goals, my background, or what I hope to get from the unit.</p> <p><i>J13)</i> I communicate (talk, email, etc.) with my lecturers/teachers about things not related to the specific course I'm taking with him or her.</p> <p><i>J14)</i> I like the in-depth learning at university level.</p> <p><i>J15)</i> I find academic study challenging and satisfying.</p> <p><i>J16)</i> I spend extra time finding out more about topics raised in the units I find interesting.</p> <p><i>J17)</i> I am enjoying studying and am thinking of enrolling in another course when I've finished.</p> <p><i>J18)</i> I enjoy participating in online chats or conferences with other students from my classes.</p>		
Scoring Options: All Questions (<i>J1-J18</i>)	<p>1 = Strongly Disagree</p> <p>2 = Disagree</p> <p>3 = Agree</p> <p>4 = Strongly Agree</p>		
Method of Computing:	Sum of the scores of all items		
Range of Possible Values:	18 to 72		

K. Motivation

The sub-scale consisted of 12 items (see *Table 4.17*) with a range of possible values of 12 to 48. When devising the sub-scale the intention was to come up with values that indicated student's motivation type within the spectrum of intrinsic to extrinsic. Intrinsic motivation being indicated by a high score and extrinsic motivation indicated by a low score.

Table 4.17. Motivation Type Sub-Scale Composition

Number of Items	12	Number of Values (n)	210
Factors (Responses to the question: 'How important were the following factors in deciding to take units' yielding 12 items each loaded equally – 8.33%)		K1) These units provide credit for my course. K2) I wanted to take these units because of when they are scheduled. K3) These units are relevant to my current job. K4) These units could be useful for my future career. K5) The units provide credit toward a degree or diploma. K6) I would like these units for my resume/transcript. K7) I am interested in the subjects. K8) I wanted to take units from these lecturers. K9) I want to get guidance and feedback in this subject. K10) I want to have interaction with other students to discuss this subject. K11) I need the formal structure of a class to learn the material. K12) I want to learn more about this subject or profession.	
Scoring Options:	Questions K1-K6	4 = Not Important 3 = Somewhat Important 2 = Very Important 1 = Extremely Important	
	Question K7-K12	1 = Not Important 2 = Somewhat Important 3 = Very Important 4 = Extremely Important	
Method of Computing:		Sum of the scores of all items	
Range of Possible Values:		12 to 48	

L. Institutional Interaction

The institutional interaction sub-scale was made up of 18 statements. The range of possible values was 18-72. Tables 4.18 and 4.19 detail the composition of the sub-scale.

Table 4.18. Institutional Interaction Sub-Scale Composition

Number of Items	18	Number of Values (n)	210
Factors (Responses to 12 items each loaded equally – 8.33%)		<p>L1) The type of material the library sends me is often inappropriate. L2) I find getting access to good resources difficult. L3) I find the knowledge of technology needed to study nowadays is very high. L4) I have trouble accessing the University's computer network and online resources. L5) I often have trouble contacting my lecturer/tutor. L6) The level and amount of work required in the assignments is more than I expected. L7) I often use the library's remote student service to help me with resources. L8) I almost always attend any face to face sessions offered by the University. L9) The distance education unit staff members are friendly and helpful. L10) I think WebCT is convenient and a helpful way to organise courses. L11) My lecturers seem interested in me and my success in the course. L12) The orientation program offered by the University was useful. L13) The University Library's service is professional and efficient. L14) The University offers adequate networks for interaction with lecturers and other students. L15) The learning materials are presented well and are easy to follow. L16) The library is always helpful when I request items. L17) I find WebCT easy to navigate. L18) My tutors/lecturers always respond promptly to my messages.</p>	

Table 4.19. Institutional Interaction Sub-Scale Composition (Continued)

Scoring Options:	Questions <i>L1-L6</i>	4 = Strongly Disagree 3 = Disagree 2 = Agree 1 = Strongly Agree
	Question <i>L7-L18</i>	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree
Method of Computing:		Sum of the scores of all items
Range of Possible Values:		18 to 72

Extraneous and Adventitious Events

The *Extraneous and Adventitious Events* scale consisted of three sub-scales; *distractions*, *unexpected events* and *change in circumstances*.

M. Distractions

The *distractions* sub-scale had a range of possible values of 15-60 (*Table 4.20*) and was constructed from 15 statements (*Table 4.20*).

Table 4.20. Distractions Sub-Scale Composition

Number of Items	15	Number of Values (n)	210
Factors (Responses to 15 items each loaded equally – 6.66%)		<i>M1)</i> As I work long hours it is difficult to find time to study. <i>M2)</i> I prefer to spend time doing other things rather than study. <i>M3)</i> My children's needs take precedence over studying. <i>M4)</i> I sometimes wonder if all the study is worth the effort. <i>M5)</i> I often consider dropping out of the course. <i>M6)</i> I've been ill during the course, so I'm finding it difficult to keep up. <i>M7)</i> I seem to have so many other things to do there is never enough time to study. <i>M8)</i> A change in my work situation is making it hard to study. <i>M9)</i> I go out a lot rather than studying. <i>M10)</i> Personal/family circumstances have been hindering my study. <i>M11)</i> I have a busy social life. <i>M12)</i> I'm not sure how useful finishing my course is really going to be to me. <i>M13)</i> I have kept myself motivated. <i>M14)</i> I am very determined to finish the course. <i>M15)</i> I do not let anything interfere with my studies.	
Scoring Options:	Questions <i>M1-M12</i>	1 = Strongly Agree 2 = Strongly Disagree 3 = Disagree 4 = Strongly Disagree	
	Question <i>M13-M15</i>	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree	
Method of Computing:		Sum of the scores of all items	
Range of Possible Values:		15 to 60	

N. Unexpected Events

The *unexpected events* sub-scale consisted of a single item/question. This single question; ‘Since the last questionnaire have any unexpected events interrupted your study or caused you to consider withdrawing’ (*N1*) was asked three times – once on each of the questionnaires except the first. Each time a student answered in the affirmative one (1) was added to their score for the sub-scale. This gave a range of possible values of 0–3. Details of the sub-scale’s definition are shown in Table 4.21. The actual reasons were also captured and these were analysed in the qualitative part of the study.

Table 4.21. Unexpected Events Sub-Scale Composition

Number of Items:	1 (x3)	Number of Values (n):	210
Factors: (Responses to 1 question put each time on three questionnaires)	<i>N1</i>) Since the last questionnaire have any unexpected events interrupted your study or caused you to consider withdrawing.		
Scoring Options: Question <i>N1</i> x 3	0 = No 1 = Yes		
Method of Computing:	Each time the question was answered in the positive, 1 was added to the subjects’ cumulative scores.		
Range of Possible Values:	0 to 3		

O. Change in Circumstances

The *change in circumstances* sub-scale was calculated using a slightly different technique to the other sub-scales. On each questionnaire, students were asked to respond to a number of statements about their personal situation such as income, proximity to study facilities, number of people in their household (see section 4.2). Each time one of these responses was different to the previous questionnaire one (1) was added to the student’s initial score of zero (0). This gave a range of possible values of 0–16 (*Table 4.22*).

Table 4.22. Change in Circumstances Sub-Scale Composition

Number of Items:	1 (x16)	Number of Values (n):	210
Factors:	Responses to 8 items on the second questionnaire compared to the first and answers to the same 8 items on the third questionnaire compared to the first or second.		
Scoring Options: Question <i>N1</i> x 3	0 = No Change 1 = Yes		
Method of Computing:	Each time a change in circumstances was recorded 1 was added to the student's cumulative score.		
Range of Possible Values:	0 to 16		

VI. EX POST-FACTO (REFLECTIVE) QUESTIONS

Two of the research questions for this study concerned students who withdrew and the reasons they gave for their withdrawal. The choice of these questions was determined both by the knowledge that a study about the reasons for withdrawal had been taken 20 years previously at the same institution at which this current study was being undertaken, and by the belief that the students reasons for withdrawal now would be insightful in themselves. It was also hoped that the current students' reasons for withdrawal might be even more enlightening if they could be compared with the reasons given 20 years ago. In this section the methodologies for the 1980s reflective study and this reflective component of the contemporary study will be summarised.

First Study – 1980s

The first study ex post-facto study by Osborne, Kirkpatrick and Kember (1987) upon which the reflective part of this study was based, used a survey methodology whereby a questionnaire elicited from students the reasons they thought contributed to their withdrawal (this type of study is sometimes called a 'post-mortem study' in the literature). Statements relating to possible reasons for withdrawal were compiled after a detailed literature survey. The

statements were circulated to external studies unit staff and the student counsellor for additions and modifications. The process resulted in a forty item questionnaire using Likert scale responses. The items were arranged in random order. In addition there were two open-ended questions designed to draw out any reasons for withdrawal not covered by the statements.

The questionnaire was sent to students who formally withdrew from external units during semester two 1983, semester one 1984 and semester one and two 1985 and following four semesters of experience with the same withdrawal questionnaire, an improved version of the questionnaire was used in semester 1, 1986. In total 391 questionnaires were mailed, and 272 useable questionnaires were returned. As well as questions relating to their reason for withdrawal, students were also asked some questions about their experience while studying as an external student at the university.

Contemporary Study

The questions on the survey for the second study which formed part of the research for this thesis were taken from the original study undertaken by Osborne, Kirkpatrick and Kember (1987) and included some elements of a subsequent study by Kember (1995) and also from more recent studies such as those of Woodley (2001), and Yorke (1999).

Each of these responses was categorised according to the five principal categories and 12 sub-categories used in the 1987 survey so that the results of the two surveys could be compared. Table 4.23 shows the available responses on the questionnaire and how they were categorised using the 1987 study's method. Respondents were asked to choose a principal reason for withdrawal and to also mark any other reasons that were contributing factors.

Table 4.23. Reasons for Withdrawal by Category and Sub-Category

CATEGORY	SUB CATEGORIES	RESPONSES
EXTERNAL, TIME RELATED	Employment demands/changes	I got a job while studying so decided to withdraw. It was too difficult trying to work and study at the same time. The course was not relevant to my career.
	Family demands/changes	I felt I was neglecting my family. I lacked support from my family.
	Other personal constraints/changes	Bereavement of someone close. Pregnancy (self or partner). Studying caused me too much stress. I had health problems. I had financial problems. I had housing problems during the course.
	Lack of Computer Access	I kept having problems with the computer network.
	General Time Related	I could never find the time to do the assignments.
PERSONAL	Study/Computer Skills	I think I lack study skills. I think I lacked the computing skills.
	Wrong Choice	I chose the wrong field of study. The course was not what I expected. The university was not what I expected.
	Problems from late enrolment/start	(Not relevant in the 2008 study)
	Lack of motivation	I needed a break from education. I think I had a lack of commitment to the course.
UNIVERSITY	Administrative problems	I wasn't getting good enough marks. I didn't like the way the course was organised. There was inadequate support from academic staff. There was inadequate support from the University generally.
	Problems with course materials	I had trouble getting the required readings/materials.
	Poor quality of support	The library support was inadequate. The university was too impersonal. The quality of teaching was poor.
	Difficulty/workload of course	I found the course too hard. The workload was too heavy. I found the study schools intimidating. The method of teaching did not suit me.

For the correlation purposes of the study it was necessary to determine into which of two groups each participant fell withdrawn or persisted. Their responses were mapped to one of two categories by using *Table 4.24*.

Table 4.24. Outcome Categories

Actual	Dichotomised
Withdrawn during semester Not re-enrolled	Withdrawn
Continuing Completed Deferred	Persisted
Opted out of study	Not included

VII. QUESTIONS FOR THE QUALITATIVE STUDY

At the end of both the questionnaires, space was included for general comments by the participants. In addition, over the four questionnaires, 45 open ended questions were asked. These questions are listed in tables 4.25 and 4.26. The comments and responses to both these categories of the open ended question were coded, tabulated and analysed by the method described above in I(b).

Table 4.25. Open Ended Questions

1	What was your opinion of the course or activities overall? [relating to a preparatory course]
2	Why do you want to study as a remote student?
3	Did your goals or reason for doing the course change during the course? If so how?
4	What do/did you like most and least about studying as a remote student?
5	If it were possible, which mode of study would you have preferred do you think? Why?
6	Do/Did you find the course interesting?
7	Do/Did you like the reading matter (please comment on the content, presentation, design)
8	When you read the study materials do/did you follow the order in which it is presented. If not what order?
9	Do you do the questions and activities suggested in WebCT/Study booklets? Why/Why not? If yes do/did you do them all, did you write down answers or just think about them?
11	Is there any study technique or method you adopt when reading the course materials or textbooks?
12	How many times do/did you read the material?
13	Do you write notes when reading? What other study techniques do you use?
14	What do you think of WebCT (or similar) as a way of delivering courses?
15	Do/Did you attend any study schools or on-campus sessions for the course? (If not, why not and if you did, did you find them useful and why)
16	Have you ever had any study or personal problems you've discussed with anyone. at the university? How do you think they were dealt with it?
17	Are the comments on assignments generally helpful?
18	Are assignments usually returned within a reasonable time?
19	Do/did you have contact with your lecturer: Which [contact method] is the most useful? What sort of thing do/did you usually discuss?
22	Do you feel your lecturers are remote/distant or do they seem friendly/easy to deal with

Table 4.26. Open Ended Questions (Continued)

23	Do you think they are interested in your progress?
24	Do you feel as though you belong to the university even though you are a remote student (Can you expand on this a little) ?
25	Do you use any of the university's facilities? Which?
26	What do you think of the services provided by the: University Library? External studies unit? Service (Help) Desk?
27	How do you feel about how the course is administered?
28	How do you find communications from the University?
29	How do you find the University's responses to your requests?
30	How do you find communication regarding instructions, procedures and requirements?
31	Describe the attitude of the administration staff
32	What (if any) aspect of administration could be improved?
33	Before starting the course, how confident did you feel about your ability to succeed as a remote student ?
34	What did you expect of the course? Is it what you expected?
35	Was the amount and difficulty of the work for the course very different to what you expected?
36	What went through your mind when it was difficult?
37	When you finish the course, how will you benefit from the qualification?
38	Overall, do you feel it was worthwhile enrolling in the course as a remote student?
39	Reason for Withdrawal? [from a particular unit/course]
40	Has anything interfered with your studies last semester or this semester?
41	Please describe the difficulties or interference:
42	How have you coped with or overcome these difficulties?
43	Did you consider withdrawing? Why did you consider withdrawing? What caused you not to withdraw?
44	Are there any activities or you have done other than this course that makes you think you are a resilient person?
45	What do you think you have gained from the course so far?

VIII. SUMMARY

This explanatory study was conducted using a mixed methodology. A range of research questions were posed, and methodologies were chosen to fit the types of question and as a way of triangulating the research. This strategy was considered appropriate given that a 'pragmatic' (Dewey, 1949) framework had been adopted for the study. The core feature of the research was a test of a model (developed for the study) using correlation analysis and linear regression. A qualitative component designed to enrich the results of the test of the model was also undertaken. In addition, a retrospective survey of non-persisting students was analysed using a mixture of empirical and qualitative data analysis techniques.

Chapter Five

RESULTS

This chapter describes the results gathered from the four questionnaires, one each semester, distributed over the term of the two year study. The principal objective of the chapter is to examine the answers to the questions and identify any information provided by the respondents that contributes to an understanding of the persistence of remote students. This chapter is divided into five sections. The first section provides an overview of the sample, summarises the outcomes of the participants and gives an explanation of the way in which the data were recorded and tabulated. The second section considers demographic and social/situational characteristics of the participants. In the third section the results, in relation to the model and the questions, are aggregated into the scales and sub-scales. The fourth section explores some of the more complicated aspects of the data and compares different subsets and dissections of the data across various topics and sub-scales. The fifth section concentrates on the reflective aspects of the study, that is, the questions asked of students who had withdrawn, to see if they could give any insights into their decisions to withdraw. The chapter concludes with some brief observations and discussion of the results in relation to the instruments and the validity and usefulness of the instruments.

I. SAMPLE AND OUTCOMES

The sample for the study consisted of 210 participants who had been identified as distance students. At this time the university classified students living more than 40kms from campus as remote. This status gave these students certain privileges. All students also had an attendance mode for their course as either 'internal' or 'external'. Those that were chosen as the original population for the study were those students who were both 'remote' and had an attendance mode of external. This gave an original population of 460. The extent of the 'remoteness' of the students ranged from just outside the 40km boundary to those living interstate and overseas. Seventy percent of students resided in Tasmania, 21% on the Australian mainland, 5% in Australian external territories (including 1 individual in Antarctica), and the remaining 4% were overseas residents.

A preliminary version of *Questionnaire 1* was sent to a pilot group of thirty distance students studying short term programs to get an idea of the usability of the survey instrument. These students were not included in the study (as the period of their enrolment was too short), nor were the results from this initial data collection recorded. In light of the responses of the pilot group, a number of changes were made to the instrument and the amended questionnaire was then sent to the remaining 430 students who were enrolled in programs of at least two years part-time duration. Two hundred and thirteen students replied stating that they would be willing to participate in the study. Three of these later withdrew from the study.

The principal finding upon which all the other findings hinge, is who among the participants persisted and who withdrew. The outcomes for the participants are summarised in Table 5.1.

Table 5.1. Sample by Categories

	Frequency	Percent
Withdrawn during semester	48	22.5
Not re-enrolled	77	36.1
Continuing	47	22.1
Completed	34	16.0
Opted out of study	3	1.4
Deferred	4	1.9
Total	213	100.0

As stated above, of the 213 students who initially agreed to participate in the study, three decided at a later stage not to participate and their data has been excluded from the results (two of the three also withdraw from their course). Of those that remained in the study, 48 withdrew formally during one of the semesters during the period of the study and 77 did not re-enrol in one of the semesters and remained unenrolled for the rest of the study (or stated that they would not re-enrol in the semester immediately after the end of the study even though they had not completed an award). During the study 34 students completed an award and 47 students were still studying at the end of survey period. Four students said they were deferring for the remainder of the survey period.

For the purposes of analysing the model and to simplify the reporting of results, the students' outcomes were consolidated into just two groups (or 'dichotomised') as either *withdrawn* or *persisting*. The withdrawn group in the consolidated responses was made up of those who withdrew from their

course, either with no intention of re-enrolling or uncertain as to whether they would ever re-enrol. The persisting group was made up of students who had completed, deferred, or who were still studying at the end of the period. Once the groups were consolidated, the final sample numbers consisted of 210 students comprising 125 withdrawn and 85 persisting (see Table 5.2).

Table 5.2. Consolidated Outcomes of Students

	Frequency	Percent
Withdrawn	125	59.0
Persisting	85	41.0
Total	210	100.0

II. DEMOGRAPHIC AND SITUATIONAL CHARACTERISTICS

The initial questionnaire contained items concerning demographic, situational and enrolment information, and each subsequent questionnaire collected data updating the situational and enrolment information. These types of characteristics were not included in the model for reasons discussed in Chapter Four. Nevertheless, even though many studies have looked at these factors and their relationship to persistence, it was decided the inclusion of these data would enrich the findings. While, as in previous studies, the results were not particularly useful as single predictors of persistence, some conjunctions of factors such as age, gender, and income did appear to be significant.

The specific factors considered in this section are; age, gender, employment, income, enrolment status, field of study, and average number of units (course load).

A. Age

The age range was spread quite evenly among the age groups used for identification in the questionnaire (see *Table 5.3*). The median group being 40–49, and over half the participants were aged between 35 and 59. Only 26.6% were under 30. Even with the average age of students at university generally increasing this was significantly older than the average age of students at Australian universities which is just over 24 years¹⁴. Three participants declined or omitted to state their age.

Table 5.3. Age of Participants at Beginning of the Study

	Frequency	Percent
Unstated	3	1.4
19 or under	11	5.2
20-24	20	9.5
25-29	22	10.5
30-34	32	15.2
35-39	36	17.1
40-49	56	26.7
50-59	21	10.0
60 or over	9	4.3
Total	210	100.0

Age, as defined by these categories, was not statistically significant¹⁵ as a predictor of persistence. The Chi-square value of 5.43 (df=8) and a *p*-Value (calculated assuming a large sample with an asymptotic distribution) of 0.71 indicated that age, by itself, did not correlate significantly with persistence or withdrawal.

¹⁴ DEST Selected Higher Education Statistics 2004 available at:
http://www.dest.gov.au/sectors/higher_education/publications_resources/profiles/students_2004_selected_higher_education_statistics.htm

¹⁵ In this study a *p*-Value of $\leq .05$ was regarded as significant.

Table 5.4. Age/Outcomes Cross-tabulation

		Outcomes		Total
		Withdrawn	Persisting	
Age	Unstated	3	0	3
	19 or under	7	4	11
	20-24	15	5	20
	25-29	14	8	22
	30-34	19	13	32
	35-39	20	16	36
	40-49	29	27	56
	50-59	12	9	21
	60 or over	6	3	9
Total		125	85	210
Pearson Chi-Square		5.43 (df=8)		
Asymp. Sig. (2-sided)		.711		

However, one characteristic of interest was found by consolidating age groupings into broader bands. In the youngest two age groups only 9 out of 31 individuals persisted—an attrition rate of 70%. This contrasts with the 35–49 cohort where the attrition rate was only 53%.

B. Gender

The majority (78%) of the respondents were female (see *Table 5.5*). Thirty-nine percent of females persisted compared to 46% of males—which produced a very weak correlation between gender and persistence. However, because of the skewed nature of the sample, it is difficult to draw any serious conclusions from this result.

Table 5.5. Gender/Outcomes Cross-tabulation

Gender	Outcomes		
	Withdrawn	Persisted	Total
Male	25	21	46
Female	100	64	164
Total	125	85	210
Person Chi-Square	.655 (df=1)		
Asymp. Sig. (2-sided)	.418		

C. Employment

As would be expected, the number of students employed full-time was higher than the general student population (29% of the sample was employed full-time)¹⁶. A similar number was unemployed or retired (31.5%). The largest group was those working part-time (39.5%). Table 5.6 shows the breakdown in actual numbers.

Table 5.6. Employment/Outcomes Cross-tabulation

		Outcomes		Total
		Withdrawn	Persisting	
Employment	Not employed or retired	45	21	66
	Part-time	52	31	83
	Full-time	28	33	61
Total		125	85	210
Person Chi-Square		7.088(df=2)		
Asymp. Sig. (2-sided)		.03		

It would appear from the figures that employment status had a weak correlation with persistence. Interestingly, those working full or part-time were more likely to persist. Indeed more people employed full-time persisted than withdrew. Of those that were ‘not employed or retired’ approximately two-thirds withdrew and one third persisted.

D. Marital Status

Sixty-three percent of the students were married or were in a defacto relationship (34% married, 29% defacto). Twelve percent were divorced and the remainder (25%) were single at the time the survey began. There was no discernable relationship between marital status and persistence.

E. Number of People in Household.

The average number of persons in a student’s household was 2.9. The range was from 1 to 7. Almost half lived in households with at least one child (43%).

There was no relationship between number of people in the household and persistence.

F. Income

Income is closely related to employment status, so not surprisingly, as the majority of students were not employed or employed part-time, their incomes tended to be in the lower end of the range for the general population (over half had an income of under \$300 per week). The relationship between income level and persistence was not as statistically pronounced as that of employment status and persistence. But a similar pattern can be discerned, with the two highest income categories showing a persistence rate of over 50% (the lowest levels of persistence were in the categories *under \$100* and those who didn't specify an income). However, the second lowest category (\$100-\$150) showed a comparatively high level of persistence—but the small numbers in this category (8) make it difficult to attach any major significance to this fact. Table 5.7 shows the frequencies for persisting, withdrawn, all students and the percentages in each category for all students.

Table 5.7. Income/Outcomes Cross-tabulation

		Outcomes		Total	
		Withdrawn	Persisting	Frequency	Percentage
Income	Not specified	4	1	5	2.4
	<\$100	16	5	21	10.0
	\$100-150	3	5	8	3.8
	\$151-200	18	8	26	12.4
	\$201-300	25	18	43	20.5
	\$301-350	20	14	34	16.2
	\$351-400	19	11	30	14.3
	\$401-450	14	15	29	13.8
	>\$450	6	8	14	6.7
Total		125	85	210	100
Pearson Chi-Square		11.41(df=8)	Asymp. Sig. (2- sided)	.179	

¹⁶ In 2006, 11.5% of Australian undergraduates were employed full-time, 61% part-time/casual and 27.5% not employed or retired (James et al. 2007, p 39).

G. Study Mode

Of the 210 students in the study, 153 did all their units off-campus. Forty-two students travelled to the university, or came to a summer school to take at least one unit. During the study, 15 students switched to on-campus/internal mode. There was really no discernable difference between the groups when it came to persistence. Around 40% of the fully off-campus students persisted, 45% of the mixed mode students persisted and 40% of the students who switched to on-campus mode persisted. Table 5.8 shows the frequencies for each of the three categories for persisting and withdrawn students as well the Chi-square and asymptotic significance values for the matrix—both indicating there was not a significant correlation.

Table 5.8. Enrolment Status/Outcome Cross-tabulation

Enrolment Status		Status of Student		Total
		Withdrawn	Persisting	
Fully Off-campus		93	60	153
Mixed mode		23	19	42
Changed to On Campus		9	6	15
Total		125	85	210
Pearson Chi-Square	.498(df=2)			
Asymp. Sig. (2-sided)	.78			

H. Course Level

The majority of the students in the sample were undertaking a bachelor's level course (73.8%). The second largest percentage was undertaking a graduate diploma (12.4%). A small number of students were undertaking a master's degree (9.0%) or doctoral degree (4.3%). A single student (0.5%) had obtained permission to do a two year diploma remotely. Course level appeared to be a marginal determinant of success, with only slightly dissimilar percentages of students persisting from each category. Of bachelor

level students—38% persisted, of graduate diploma students—53.8%, of masters' students—31.6% and of doctoral students—55.5%.

Doctoral students had the highest success rate. However, there was a very small number of students in the category and their experiences could not be considered typical of students as generally, all doctoral students work in relative isolation. Also, doctoral students found it difficult to connect with many of the items on the questionnaires, and it became apparent that the questionnaires were formulated primarily, though inadvertently, with undergraduates in mind. The decision to include doctoral students was put in doubt when it became clear that the issues for them were very different for the students studying coursework degrees.

The breakdown in numbers between the course levels is shown in *Table 5.9*. The correlation statistics in the table show a low level of correlation between course level and outcome.

Table 5.9. Course Level/Outcomes Cross-tabulation

Course Level	Outcomes		Total
	Withdrawn	Persisting	
Two year	0	1	1
Bachelor	95	59	155
Grad Dip	12	14	26
Master	13	6	19
Doctorate	4	5	9
Total	125	85	210
Pearson Chi-Square	4.283 (df=4)		
Asymp. Sig. (2-tailed)	.37		

I. Field of Study

The subjects or majors studied by each student were grouped using broad categories used in other studies and which also largely coincided with the faculties at the university. The majority of remote students were studying in

the fields of humanities, social sciences and education. The persistence rate among the categories ranged from 100% in Law (though this included just a single postgraduate student), 50% in Business, 47.5% in the Humanities, 42% in the Social Sciences, 36.5% in the Health Sciences, 36% in Education, and 22% in Science and Engineering. While this does not show a strong correlation, there does appear to be a tendency for students undertaking the more reading oriented degrees to succeed in studying remotely than the more practical or applied disciplines. Table 5.10 shows a matrix of the categories versus outcomes as well as the correlation statistics, which show an insignificant level of relationship.

Table 5.10. Field of Study/Outcomes Cross-tabulation

Field of Study	Outcomes		Total
	Withdrawn	Persisting	
Humanities	31	26	57
Social Sciences	25	18	43
Science and Engineering	7	2	9
Business	8	8	16
Health Sciences	14	8	22
Education	39	22	61
Law	0	1	1
Undecided/General	1	0	1
Total	125	85	210
Pearson Chi-Square	7.94(df=4)		
Asymp. Sig. (2-tailed)	.34		

J. Course Load

Most students in the study undertook two units per semester and the categories covering between one and 2.9 units accounted for 87% of students. A few students were enrolled full-time and averaged three or more units per semester (6%). A similarly small number didn't enrol each semester and averaged less than one unit (7%). The figures in Table 5.11 indicate that there is little difference in outcome based solely on course load—except that the 1.5–1.9 units category seems to do marginally better than any other, with a

persistence rate of over 50%. Whereas all the other groups are closer to 40%—indicating perhaps that the recommended load of two units per semester is close to optimal.

Table 5.11. No. of Units/Outcomes Cross-tabulation

No. of Units	Outcomes		Total
	Withdrawn	Persisting	
0-.09	10	4	14
1.0-1.4	25	12	37
1.5-1.9	35	36	71
2.0-2.4	24	15	39
2.5-2.9	22	14	36
3.0+	9	4	13
Total	125	85	210

However, the difference is not significant from a statistical viewpoint. Indeed, if the students are ranked according to the number of units taken over the period of the study and this is compared to their outcome as in Table 5.12, it shows that there is almost no difference between the two groups.

Table 5.12. Ranking of Students by Number of Units/Outcomes

Outcomes	N	Mean Rank	Sum of Ranks
Withdrawn	124	105.25	13051.00
Persisting	86	105.86	9104.00
Total	210		

One of the parameters of the study was the impact of the advent of online units and courseware management systems on the experiences of remote students. When the study began, the university was still offering a number of traditional distance education units based primarily on printed ‘course packs’ (this has since diminished significantly) and the questionnaires were designed to give some indication of the comparative persistence rates of remote students who took predominantly online units and those who took these

mostly traditional units. As can be seen from Table 5.13—there would appear to be very little difference with the persistence rates for online versus traditional units. Indeed, as most students in fact took a fairly even mix of the types of units—the intended ability to differentiate between students who were predominately studying online or traditionally did not really materialise.

Table 5.13. Average Numbers of Online Units and Distance Education Units/Outcomes

		Outcomes		Total
		Withdrawn	Persisting	
Online units	0-.09	67	39	106
	1.0-1.4	23	14	37
	1.5-1.9	19	22	41
	2.0-2.4	12	9	21
	2.5-2.9	3	1	4
	3.0+	1	0	1
	Total	125	85	210
DE units	0-.09	62	34	96
	1.0-1.4	31	21	52
	1.5-1.9	21	25	46
	2.0-2.4	6	2	8
	2.5-2.9	5	2	7
	3.0+	0	1	1
	Total	125	85	210

Multivariate analyses were undertaken of most combinations of the situational and demographic factors. Almost all of these analyses showed no features of note. However, an interesting result from a multivariate analysis of the situational and demographic data was the very strong correlation for the sub-group of students who had the characteristic of being male, being aged 30–39 and having an income of over \$300 per week. Almost all of these students ended up as in the persisting group.

III. MODEL FACTORS AND SUB-SCALES

This section includes observations on the theoretical model of persistence and the validity of the model in relation to the correlation between the factors or sub-scales making up the model and the outcomes for the students. The sub-scales are calculated by assigning a score to the individual students for each factor based on (mostly Likert scale) responses to questions or statements as described above in Chapter Four. The scores were then averaged for the two groups of students, those that persisted and those who withdrew. When reporting the results the emphasis is on isolating factors or conditions that seem to promote or have some predictive value with regard to persistence. Each section will include a brief observation of the reliability of the sub-scale and any observations on the validity of individual questions. The sections follow the structure of the model and are divided as:

Entry Characteristics

- A. Educational background*
- B. Computer Experience*
- C. Preparatory Course*
- D. Attitude to Distance and
Online Learning*
- E. Self-Efficacy*
- F. Goal Commitment*

Social Integration

- G. Family Support*
- H. Employer Support*
- I. Peer Support*

Academic Integration

- J. Learning Approach*
- K. Motivation Type*
- L. Institutional Interaction*

Extraneous and Adventitious Events

- M. Distractions*
- N. Unexpected Events*
- O. Change in Circumstances*

Entry Characteristics

A. Educational background

Educational background was measured by giving a value to the student's highest level of education prior to enrolment and then adding a value reflecting the number of years of tertiary study—to come up with an overall value or 'sub-scale score'. Internal consistency was not measured for this sub-scale as there were only two items making up the scale – each independent of the other. The values for students in the sample ranged from two (no students had a value of one) which indicated the completion of at least year eleven or twelve and seven which indicated at least three full-time years or equivalent experience at university level. The results show that educational background (using this method of scaling) was a statistically significant factor in the success of remote students. Educational background, especially at tertiary level, did correlate strongly with persistence. Table 5.14 shows the mean results for this sub-scale. There is a marked difference in the mean scores and mean ranks for withdrawn and persisting students.

Table 5.14. Educational background Sub-Scale Results

	Withdrawn students	Persisting students	All Students
Range	2-7	2-7	2-7
Mean Values	3.22	4.17	3.61
Standard Deviation	1.02	1.24	1.20
Skewness	0.55	0.31	.54
Kurtosis	-.409	-.544	-.278
Mean Rank	87.32	132.24	
Sum of Ranks	10915	11240	

The t -test value¹⁷, Z-test value¹⁸ and Mann Whitney U¹⁹ in Table 5.15 show that the difference in the means of the two groups—persisting and withdrawn students—are sufficiently large to students to not be due to chance.

Also, Pearsons r value²⁰ value and Spearman's Rho²¹ indicated that there was a correlation between the two variables *educational background* and persistence that was significant.

Table 5.15. Educational background — Correlation with Persistence

T	6.08 (df=208)
Z	-5.43
Mann Whitney U	3040
Pearson's r	.389
Spearman's Rho	.376
Asymp Sig (two tailed)	.002

B. Computer Experience

To ascertain a student's *computer experience* the questionnaires included ten computer related items. The possible range of values for this sub-scale was 10

¹⁷ The t -test is a common method of determining whether the means of two different populations (or samples) are different. The method used in this thesis to calculate t is the Welch-Satterthwaite equation. This method calculates a two-tailed test of the probability that the difference in the means of two samples could occur by chance when two sample sizes are unequal and the variance is assumed to be different (Press et al, 1999, p 616). The t -test is most accurate when used for small samples. As the sample is this study is arguably not small, the Z-test has also been used.

¹⁸ The Z-test is a statistical test used in inference which determines if the difference between a sample mean and the population mean is large enough to be statistically significant. When using the Z-test, if it is not known that the population varies normally, a sufficiently large sample, generally agreed to be ≥ 30 or 40 is required.

¹⁹ The Mann-Whitney U-test is a non-parametric test for whether the null hypothesis that the probability of an observation from one population exceeding an observation from the second population is equal to 0.5. It requires the two samples to be independent, and the observations to be ordinal.

²⁰ Pearson's r is shorthand way of referring to the Pearson Product Moment Correlation when computed in a sample. Pearson's correlation reflects the degree of linear relationship between two variables. It ranges from +1 to -1. A correlation of +1 means that there is a perfect positive linear relationship between variables.

–40, the range of scores assigned to students from their responses was 12–37. The questions comprising this sub-scale gave an alpha value of 0.74 indicating a good level of internal consistency. The results of the survey for computer experience indicated a significant difference in the means of the scores for withdrawn students (18.49) compared to persisting students (27.67). When the students were ranked and the mean ranks compared the difference was even more marked. Table 5.16 details these results.

Table 5.16. Computer Experience Sub-Scale Results

	Withdrawn students	Persisting students	All Students
Internal Consistency	-	-	.74
Range	12-37	12-37	12-37
Mean Values	18.49	27.67	22.21
Standard Deviation	3.16	3.03	3.11
Skewness	1.44	.13	.41
Kurtosis	6.47	-.25	.83
Mean Rank	64.86	165.26	
Sum of Ranks	8108	14047	

The correlation statistics for the two groups also indicated a strong relationship between *computer experience* and persistence. A *t*-test on the means gave a result of 21.15 (208 degrees of freedom) and a Pearson's *r* of 0.83. The similar statistics for ranks show a Mann Whitney U of 233 and a Spearman's Rho of 0.82 all indicating a significant correlation with outcome (Table 5.17).

Table 5.17. Computer Experience — Correlation with Persistence

<i>T</i>	21.15 (df=208)
<i>Z</i>	-11.78
Mann Whitney U	233
Pearson's <i>r</i>	.83
Spearman's Rho	.82
Asymp Sig (two tailed)	.000

²¹ Spearman's rho is also a measure of the linear relationship between two variables. It differs from Pearson's correlation only in that the computations are done after the numbers are

C. Preparatory Course

The first questionnaire asked whether the students had done a preparatory course of some kind organised by the university. The majority of students answered 'no' (66.2%). For the purposes of analysing the results in SPSS the value of 0 was assigned to 'no' and 1 to 'yes' (see Table 5.18 for the treatment of the factor as a sub-scale) – this gave a mean 0.34.

A comparison of the two groups of students shows only a slight difference in the means, 0.31 for withdrawn students and 0.39 for persisting (see Table 5.19 for detail). The Chi-square results and Pearson's r , as listed in Table 5.19, also show a low level of correlation.

Table 5.18. Preparatory Course Results

	Withdrawn students	Persisting students	All Students
Range	0-1	0-1	0-1
Mean Values	.31	.39	.34
Standard Deviation	.46	.49	.47
Skewness	.86	.46	.69
Kurtosis	-1.83	-1.30	.83
Number of 'Yes' Responses	38	33	71 (33.8%)
Number of 'No' Responses	87	52	139 (66.2%)

Table 5.19. Preparatory Course Correlation with Persistence

Chi Square	1.604 (df=1)
Pearson's r	.087
Asymp Sig (two tailed)	.21

The results for this factor were also interesting in ways un-related to the model but rather to the post-mortem study—these will be expanded on in Section Five.

converted to ranks.

D. Attitude to Distance and Online Learning

Four statements were used to measure students' *attitude to online learning*. The question's internal consistency, measured using Cronbach's Alpha was reasonable with a value of 0.68. The possible range of values for the sub-scale was 4–16 which was the same as the observed range (as shown in *Table 5.20*).

Table 5.20 also shows the mean values and ranks for the sub-scale. While the difference in the means for the two groups (8.30 for withdrawn students and 11.77 for persisting) shows some variation, it is not till one looks at the differences in the average ranks that a positive *attitude to online learning* as measured here does appear to correlate with persistence in remote students.

Table 5.20. Attitude to Online Learning Sub-Scale Results

	Withdrawn students	Persisting students	All Students
Range	5-12	7-16	4-16
Internal Consistency	-	-	.68
Mean Values	8.30	11.77	9.70
Standard Deviation	1.43	1.50	2.24
Skewness	.143	.173	.258
Kurtosis	-.32	1.38	-.50
Mean Rank	66.99	162.14	
Sum of Ranks	8374	13782	

Looking at the correlation measures (as outlined below in Table 5.21) these confirm a correlation between *attitude to online learning* and persistence. The *t* score of 16.98, *r* of 0.76, Rho of 0.78 all indicate a significant correlation.

Table 5.21. Attitude to Online Learning Correlation with Persistence

<i>T</i>	16.98 (df=208)
Pearson's <i>r</i>	.76
Mann Whitney U	498.5
<i>Z</i>	-11.23
Spearman's Rho	.78
Asymp Sig (two tailed)	.000

E. Self-Efficacy

In an effort to measure *self-efficacy*, a sub-scale of four statements was developed. These had a possible and observed range of 4–16 and produced an internal consistency of 0.62 using Cronbach's Alpha, which is not an unreasonable level but not ideal. There was a discernable difference in the means of the scores between the two groups, and difference in mean ranks was quite marked (see Table 5.22 below).

Table 5.22. Self-Efficacy Sub-Scale Results

	Withdrawn students	Persisting students	All Students
Range	4-13	8-16	4-16
Internal Consistency	-	-	.62
Mean Values	8.55	12.03	9.96
Standard Deviation	1.90	1.80	2.52
Skewness	-.12	.09	.05
Kurtosis	-.04	-.24	-.34
Mean Rank	70.91	156.31	
Sum of Ranks	8864	13291	

The correlation measures in Table 5.23 indicated that correlation between *self-efficacy* as measured here and persistence was significant.

Table 5.23. Self-Efficacy Correlation with Persistence

<i>T</i>	13.31 (df=208)
Pearson's <i>r</i>	.68
Mann Whitney U	989
<i>Z</i>	-10.06
Spearman's Rho	.70
Asymp Sig (2 tailed)	.000

F. Goal Commitment

Goal commitment was measured by a group of ten statements (as listed above in *Table 4.12*). The possible range of results was 10–40 but a range of 14–35 was observed. The sub-scale produced a marginal level of internal consistency of 0.61 (Cronbach's Alpha). The results indicated a marginal difference in the mean scores between the two groups and a slightly more pronounced difference in the mean ranks (see *Table 5.25* for details).

Table 5.24. Goal Commitment Sub-Scale Results

	Withdrawn students	Persisting students	All Students
Range	14-29	19-35	14-35
Internal Consistency	-	-	.61
Mean Values	21.48	24.92	22.83
Standard Deviation	3.40	3.03	3.68
Skewness	-.02	.87	.10
Kurtosis	-.63	1.29	.30
Mean Rank	82.6	139.2	
Sum of Ranks	10325	11830	

The correlation between *goal commitment* and persistence appeared to be significant—with a *t* score, *r* and Rho value indicating at least some correlation (*Table 5.25*).

Table 5.25. Goal Commitment Correlation with Persistence

<i>T</i>	7.67 (df=208)
Pearson's <i>r</i>	.47
Mann Whitney U	2450
<i>Z</i>	-6.651
Spearman's Rho	.46
Asymp Sig (Two tailed)	.001

The other major feature of the multivariate analysis was that *computer experience* and *attitude to online learning* displayed a strong correlation to one another and each also had a similar correlation to persistence. This perhaps indicating that a similar characteristic was being measured by the two sub-scales and that there is some redundancy in the model.

Social Integration

The *Social Integration* scale consisted of three sub-scales: *family support*, *employer support* and *peer support*. The results were surprising with only one, *family support* showing a high correlation with outcome, and another—*employer support* showed no correlation with outcome.

G. Family Support

The *family support* sub-scale included five statements/factors and had a possible range of values of 5–20. The observed range was 6–20. The internal consistency of the sub-scale was reasonable with a Cronbach Alpha of 0.65.

The results of the sub-scale show a marked difference in the mean scores of the two groups with the persisting students 21% higher than the withdrawn students. Similarly, the mean ranks are also considerably higher for persisting students (Table 5.24).

Table 5.24. Family Support Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range	7-17	6-20	6-20
Internal Consistency	-	-	.65
Mean Values	11.13	14.04	12.30
Standard Deviation	2.10	2.77	2.78
Skewness	.32	-.15	.39
Kurtosis	.37	.85	.08
Mean Rank	79.39	143.89	
Sum of Ranks	9924	12231	

The correlation indicators confirm that there is a discernable correlation between *Family Support* and *Outcome* as measured in this study (see Table 5.25 for values).

Table 5.25. Family Support Correlation with Persistence

<i>T</i>	8.64 (df=208)
Pearson's <i>r</i>	.51
Mann Whitney U	2049
<i>Z</i>	-7.58
Spearman's Rho	.53
Asymp Sig (Two tailed)	.000

H. Employer Support

The sub-scale of *Employer Support* consisted of only three statements. The possible and observed range for the sub-scale score was 3–12. The Cronbach Alpha for the subscale of 0.69 shows an acceptable degree of internal consistency. However, the results for the subscale showed very little difference between the two groups—the mean scores were closely aligned as were the mean ranks, with the persisting students having only a slightly higher mean rank than withdrawn students (see Table 5.26 for actual values).

Table 5.26. Employer Support Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range	3-12	3-12	3-12
Internal Consistency	-	-	.69
Mean Values	5.74	5.97	5.83
Standard Deviation	1.76	1.79	1.77
Skewness	.09	.51	.27
Kurtosis	-.35	.36	-.03
Mean Rank	102.92	109.30	
Sum of Ranks	12864	9290	

The correlation indicators also show no correlation between *employer support* as measured in this study and persistence – summarised in Table 5.27. It seemed from the results that very few students believed their employer supported them—and this was equally true for both the persisting and withdrawn group. The usefulness of the sub-scale must also be questioned since, as already mentioned above, a large proportion of students were not employed at all (31.5%). This may have affected the results for this sub-scale. However, a review of the responses to the three statements for this subscale indicated that over 85% of respondents in this group either left the statements blank or wrote ‘NA’ in the appropriate space on the questionnaire.

Table 5.27. Employer Support Correlation with Persistence

<i>t</i>	.92
Pearson's <i>r</i>	.06
Mann Whitney U	4989.5
Z	-7.66
Spearman's Rho	.05
Asymp Sig (Two tailed)	.445

I. Peer Support

The *peer support* sub-scale was made up of three statements (see Table 4.15). The range of values for the sub-scale was 3–12, as was the observed range. The sub-scale's Cronbach Alpha of 0.71 made the scale internally consistent. The results for the sub-scale showed some difference between the two groups

with withdrawn students having a discernibly lower mean score and mean rank (Table 5.28).

Table 5.28. Peer Environment Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range	3-12	3-12	3-12
Internal Consistency	-	-	.71
Mean Values	6.02	8.21	6.90
Standard Deviation	1.82	2.01	2.19
Skewness	.40	-.76	.06
Kurtosis	.55	.51	-.57
Mean Rank	79.96	143.06	
Sum of Ranks	9995	12 160	

The correlation measures for the sub-scale against persistence also show a significant correlation but not a relationship quite as marked as that between *family support* and persistence. Table 5.29 summarises the pertinent correlation statistics.

Table 5.29. Peer Environment Correlation with Persistence

<i>T</i>	8.21 (df=208)
Pearson's <i>r</i>	.495
Mann Whitney U	2120
<i>Z</i>	-7.46
Spearman's Rho	.51
Asymp Sig (Two tailed)	.000

Academic Integration

The *Academic Integration* scale included three sub-scales; *learning approach*, *motivation* and *institutional interaction*. *Learning approach* was strongly correlated with persistence as was *institutional interaction*, but interestingly, *motivation* did not seem linked to persistence at all – but on closer inspection *motivation* was linked in a rather unexpected manner. Indeed of all the findings of this study, this is perhaps the most revealing – it appeared that it

did not matter whether students were intrinsically or extrinsically motivated —so long as they were strongly motivated in one direction or the other.

J. Learning Approach

Despite the large number of responses comprising the sub-scale, it produced good internal consistency – with a Cronbach Alpha of 0.74. The range of possible scores for the sub-scale was 18–72, the observed range was 29–64. The results for the sub-scale showed a marked difference in the means of the scores for the two groups with withdrawn students having a mean score of 38.94 whereas the persisting students had a mean score of 50.11. Similarly, the mean ranks for the two groups were quite divergent as is shown in Table 5.30.

Table 5.30. Learning Approach Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range	29-47	42-64	29-64
Internal Consistency	-	-	.74
Mean Values	38.94	50.11	43.50
Standard Deviation	3.74	4.37	6.79
Skewness	-.07	1.51	.49
Kurtosis	-.24	3.28	.14
Mean Rank	63.97	166.5	
Sum of Ranks	7996	14 159	

The correlation indicators summarised below in Table 5.31 display a distinct correlation between *learning approach* and persistence, both from the perspective of the means—with a Pearson's r of 0.81 and the ranks with a Spearman's Rho of 0.83.

Table 5.31. Learning Approach Correlation with Persistence

T	19.95
Pearson's r	.81
Mann Whitney U	121
Z	-12.03
Spearman's Rho	.83
Asymp Sig (two tailed)	.000

K. Motivation

Even though *motivation* shows no correlation with persistence using the conventional measures, it is perhaps the most interesting of the sub-scales. The sub-scale consisted of 12 items (see Table 4.17) with a range of possible values of 12–48 (observed values were 14–46). When devising the sub-scale the intention was to come up with values that indicated student’s motivation type within the spectrum of intrinsic to extrinsic – that is was the student primarily intrinsically or extrinsically motivated. Intrinsic motivation being indicated by a high score and extrinsic motivation indicated by a low score. Of all the sub-scales this had the highest Cronbach Alpha (0.89). Indeed the statements seemed to divide the sample into three groups; those who answered all the statements using consistently one extreme of the scale, those who answered at other extreme of the scale, and those that gave responses consistently in the middle. Those who answered using the middle options tended most often to be those who withdrew.

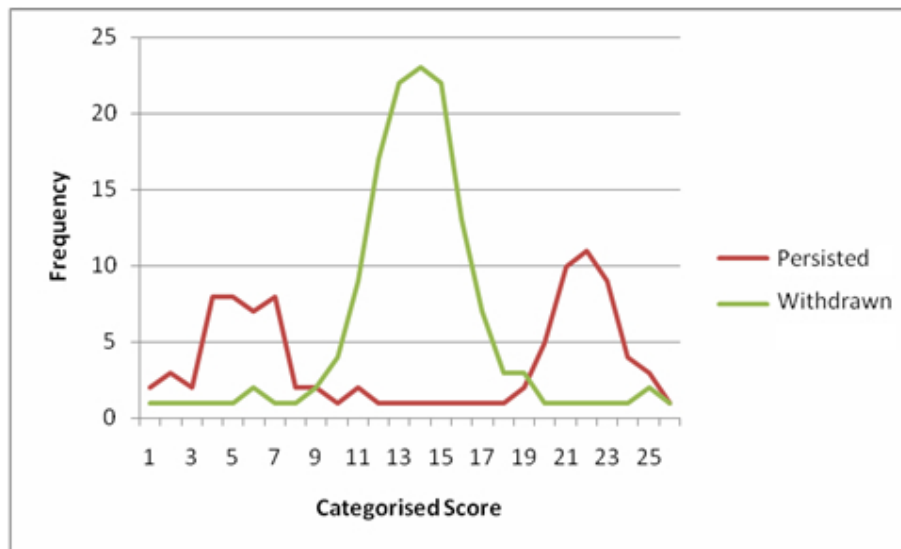
The mean scores and means ranks of the two groups, withdrawn or persisting showed very little difference (Table 5.32).

Table 5.32. Motivation Type Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range	14-26	14-46	14-46
Internal Consistency	-	-	.89
Mean Values	29.84	30.58	30.14
Standard Deviation	1.72	12.20	2.18
Skewness	.07	-.09	.03
Kurtosis	-.02	-1.95	-.448
Mean Rank	104	107.71	
Sum of Ranks	13000	9155	

However, the hint that the results had produced something unexpected was the unusually low value in the kurtosis (or pointedness) of the curve of the plot of the scores for the persisting students compared to the withdrawn students. Figure 5.1 shows a graph plotting the frequencies and categorised²² scores for both groups of students. The graph clearly shows the quite different pattern of response between the two groups. The red line of the graph plots the frequency of persisting students for each score. The highest frequencies cluster around the highest and lowest scores in two peaks. The green line plots the frequencies of withdrawn students. The highest numbers of these students are seen to cluster around the moderate scores, with a very prominent central peak skewed very slightly toward the higher scores. However, as expected, the standard measures showed no correlation whatsoever between the *motivation* and persistence (Table 5.33).

Figure 5.1. Graph of Numbers of Students and their Motivation Scores.



²² The students' responses produced a total of 26 different scores. The Figure 5.1 was produced by charting the frequency of each of these scores and scaling them in order 1-26.

Table 5.33. Motivation Correlation with Persistence

<i>T</i>	.67 (df=208)
Pearson's <i>r</i>	.05
Mann Whitney U	5125
<i>Z</i>	-.44
Spearman's Rho	.03
Asymp Sig (Two tailed)	.663

L. Institutional Interaction

The institutional interaction sub-scale as made up of 18 statements. The range of possible values was 18–72 and the observed range was 26–59. The internal consistency was high with a Cronbach Alpha of 0.81.

The results for the sub-scale show a marked difference in mean score and mean rank between the two groups. The difference in mean ranks is particularly pronounced, as shown in *Table 5.34*, with withdrawn students having a mean rank of 63.43 compared to persisting students with a mean rank of 53.56.

Table 5.34. Institutional Interaction Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range			26-59
Internal Consistency			.81
Mean Values	39.21	53.56	45.02
Standard Deviation	4.31	3.15	8.06
Skewness	-.05	-.70	.07
Kurtosis	.10	.65	-1.25
Mean Rank	63.43	167.37	
Sum of Ranks	7928	14226	

The correlation measures (*Table 5.35*) backup this observed difference with a Pearson's *r* of 0.88 for the means and Spearman's Rho of 0.84 for the ranks. Asymptotic significance (two tailed) was at the 0.01 level.

Table 5.35. Institutional Interaction Correlation with Persistence

<i>T</i>	26.29
Pearson's <i>r</i>	.88
Mann Whitney U	53.5
<i>Z</i>	-12.18
Spearman's Rho	.84
Asymp Sig (Two tailed)	.01

Extraneous and Adventitious Events

The *Extraneous and Adventitious Events* scale consisted of three sub-scales; *distractions*, *unexpected events* and *change in circumstances*. It was assumed that these external factors would show a negative correlation with persistence – that is the higher the score, the less likely it was that students would persist. This was borne out to a degree, but not to the level expected. Certainly it appeared that some students can be remarkably resilient in the face of very difficult circumstances, whereas others are much more sensitive to external influences.

M. Distractions

The *distractions* sub-scale was constructed from 15 statements. The range of possible values was 15–60 and the observed range was 25–50. One of the statements, *M14* 'I am very determined to finish the course' had the highest correlation with persistence—those that answered the question in the affirmative were twice as likely to be in the persisting group rather than the withdrawn group.

The results for the subscale show a significant difference in the means of the scores and the means of the ranks for the two groups. As shown in *Table 5.36*, there is a difference of 25.8% in the means and 62% in the ranks.

Table 5.36. Distractions Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range			25-50
Internal Consistency			.76
Mean Values	33.40	44.99	38.08
Standard Deviation	3.63	2.46	6.54
Skewness	.17	-.29	.05
Kurtosis	-.41	.05	-1.3
Mean Rank	63.38	167.44	
Sum of Ranks	7923	14232	

The Pearson r and Spearman's Rho correlation statistics also indicate a significant correlation between *distractions* and persistence as measured (Table 5.37).

Table 5.37. Distractions Correlation with Persistence

T	25.69 (df=208)
Pearson's r	.87
Mann Whitney U	48
Z	-12.20
Spearman's Rho	.84
Asymp Sig (Two tailed)	.000

N. Unexpected Events

The *unexpected events* sub-scale consisted of a single factor/question. This single question; 'Since the last questionnaire have any unexpected events interrupted your study or caused you to consider withdrawing' ($N1$) was asked three times – once on each of the questionnaires except the first. Each time a student answered in the affirmative one (1) was added to their score for the sub-scale. This gave a range of possible values of 0–3 and the observed range was also 0–3.

Table 5.38. Unexpected Events Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range			0-3
Mean Values	.42	.38	.41
Standard Deviation	.70	.74	.71
Skewness	1.79	1.98	1.85
Kurtosis	3.16	3.15	3.02
Mean Rank	108.26	101.45	
Sum of Ranks	13532	8623	

Table 5.38 shows that there was a very minor difference in the mean scores and mean ranks for the sub-scale between the persisting and the withdrawn group, with the withdrawn group being slightly higher in both instances compared to the persisting group. The correlation measures showed that this small difference did not translate to a statistically significant correlation between *unexpected events* and persistence.

Table 5.39. Unexpected Events Correlation with Persistence

<i>T</i>	-.47 (df=208)
Pearson's <i>r</i>	-.03
Mann Whitney U	4968
<i>Z</i>	-1.00
Spearman's Rho	-.07
Asymp Sig (two tailed)	.64

O. Change in Circumstances

The *change in circumstances* sub-scale was calculated by asking students to respond to a number of statements about their personal situation (see section 4.2 of this chapter). Each time one of these responses was different to the previous questionnaire one (1) was added to the student's initial score of zero (0). This gave a range of possible values of 0–16. However, the observed range was only 0–3. The results for this sub-scale showed a small variation in the

mean scores and a slightly more discernible variation in the mean ranks (Table 5.40).

Table 5.40. Change in Circumstances Sub-Scale Results

	Withdrawn Students	Persisting Students	All Students
Range			0-3
Mean Values	.42	.38	.41
Standard Deviation	.70	.74	.71
Skewness	1.79	1.98	1.85
Kurtosis	3.15	3.15	3.02
Mean Rank	109.51	99.61	
Sum of Ranks	13689	8467	

This translated to a very weak relationship between *unexpected events* and persistence—those with a higher score on the sub-scale were slightly more likely to withdraw than those with a lower score (Table 5.41 shows the correlation measures—note the asymptotic significance at the 0.09 level).

Table 5.41. Unexpected Events Correlation with Persistence

<i>T</i>	-1.67
Pearson's <i>r</i>	-.12
Mann Whitney U	4812
<i>Z</i>	-1.22
Spearman's Rho	-.08
Asymp Sig (two tailed)	.09

Overall Utility of the Model

The coefficient of determination (R^2) was calculated for each of the principal components of the model and for the model as a whole. The coefficient of determination is used to measure the goodness of fit of statistical models whose main purpose is the prediction of future outcomes on the basis of other

related information. That is, in statistical terms, the proportion of variability in a data set that is accounted for by the statistical model, which in effect provides a measure of how well future outcomes are likely to be predicted by the model. An R^2 of 1.0 indicates that the regression line perfectly fits the data. Adjusted R^2 is a modification of R^2 that adjusts for the number of explanatory terms in a model. The residual is an observable estimate of the unobservable statistical error (Everitt, 2002). In Table 5.42 the results of these calculations are displayed. Two of the components, *Entry Characteristics* and *Academic Integration* have values showing a good fit, that is, where a minority of the variance is unexplained. The same measures for all the components combined indicated that 14% of the variance is unexplained by the model. While this does not approach perfect goodness of fit, it does indicate that the model could be a useful tool of predicting a significant proportion of student persistence. The model also compares well with Kember's model for which the highest R^2 obtained during testing was 0.78, leaving 22% of the variance unexplained (Kember, 1995, p 154).

Table 5.42. R^2 Values and Residuals for the Model

Component	R^2	Adjusted R^2	Residual
Entry Characteristics (E)	.689	.687	.076
Social Integration (S)	.266	.262	.179
Academic Integration (A)	.718	.716	.069
Extran. Events (X)	.284	.281	.174
Model (E,S,A,X)	.860	.858	.034

IV. QUALITATIVE COMPONENT RESULTS

As discussed in Chapter Four, two types of thematic analysis of the data were undertaken: an inductive 'bottom up' approach and a theoretical approach. The analysis from the theoretical approach was driven by the research questions, and the themes in the analysis were essentially the

themes/subscales in the quantitative components—that is the testing of the model and ex post-facto (reflective) component. The main purpose of this part of the study was to inform and enrich the quantitative results in these other two components. Therefore, the results of the theoretical thematic analysis are discussed within and alongside the analysis of the results for the test of the model and the ex post-facto (reflective) survey in Chapter 6.

However, the results of the inductive thematic analysis will be discussed briefly here. Three main themes, not entirely anticipated in the preparation and design of the study, came out of the process. The first was that students were very much aware of, and concerned with, the inherent de-motivating nature of distance education. The second was that many students believed that they had to mine or nurture a certain quality in themselves to persist. This quality or characteristic could best be described as ‘resilience’. The third theme was that a significant number of students identified assessment methods as a significant variable in either assisting in, or deterring them from, persisting.

The De-motivating Nature of Distance Education

Many of the comments, especially among the responses to the open question at the end of each survey, consisted of concerns about staying motivated, particularly in respect to the need for some sort of feeling of affiliation or sense of belonging that was felt lacking in distance education. According to the theory of cognitive evaluation (Deci & Ryan, 1991), an individual’s motivation is mainly determined by three factors: feelings of autonomy, competence and affiliation. So while, autonomy is important this needs to be balanced by feelings of affiliation and reinforcement of a student’s competence. Deci and Ryan’s suppositions seem to be largely born out by the attitudes of the students in this study, where a lack of a feeling of affiliation

and an uncertainty about their own competence colours a significant number of responses:

‘Studying by distance is so lonely. I log into WebCT and sometimes feel like typing: is there anyone out there?’ (S withdrew).

‘I get the feeling no-one cares if you do the work or not. You could drop out and no-one would even know. I just don’t feel part of anything. It makes it hard to keep going.’ (H withdrew).

‘Staying motivated is hard. You don’t get much feedback and sometimes I feel I’m just going through the motions and not really developing.’ (D withdrew).

‘I feel so out of touch with what’s going on. Am I on the right track? It’s hard to put in the effort when you think you might be wasting your time.’ (W persisted).

‘If I had other students to discuss things with I’d know if my work was any good. I sometimes feel I don’t want to put in the assignments because I think I might have completely misinterpreted the question.’ (M withdrew).

‘Distance education doesn’t keep you motivated. You need others to help you keep going.’ (A persisted).

‘The university should do more to inform you of your progress. Studying by distance makes you feel you’re all on your own.’ (U persisted).

Resilience

A clearly recognisable theme in the students’ comments was the importance of having an ability to persevere and adapt when circumstances change or become difficult. This concept is often termed ‘resilience’ in educational psychology (Reivich & Shatte, 2002). The students appeared to believe that either they had an innate personality trait or their previous experiences had imbued them with such a characteristic.

Resilience has been an accepted and comparatively well understood factor in the research literature pertaining to school-age education (Gilligan, 2000; Luthar et al., 2000; Bryan, 2005). In this study, where the students are in higher education, the students' own concept appeared to be synonymous with stoicism, and the ability to endure and persist in the face of unexpected or evolving difficulties. Some of the insightful comments were:

'Studying like this demands a lot of self-discipline. I'm glad I've found I've got it'. (G went on to complete in the last semester of the study).

'I've always thought of myself as pretty tough, but studying this way has really been a trial. I'm glad it'll be over soon, but I'm also quite proud of myself for keeping going.' (G persisted).

'You've just got to be resilient and think positive.' (I persisted).

'Sometimes I just feel I can't do it with all the crap at home and pressure at work. But I think you've got to stick at things, so I just keep going' (D persisted).

'I've had lots of personal problems recently, but I think to succeed in life, you've just got to be able to bounce back and keep going.' (J persisted).

'I often think of dropping out – especially when I've just started assignments and am finding it hard – but then I just say to myself – you I don't want to be stacking shelves all your life – just get on with it!' (F persisted).

Some of the students simply extolled the virtue of resilience while others implied that there were strategies one can develop to assist with resilience:

'After the comments on my first assignment I felt like dropping out. But then I thought, no I've got to keep going, I know I can do it.' (P persisted).

'You've just got to be organized and not let things get you down.' (S persisted).

'I think each year study has got easier to cope with. At the start it was really hard – now I've worked out how to pass without stressing out.' (E persisted).

'Sometimes I thought I'd never get through, but you've just got to stay focused, not let the little things get to you.' (G persisted).

'My advice to anyone is you've just got to keep trying. It'll be painful sometimes but just keep going.' (A persisted).

Some the students who withdrew made comments implying that they had come to the limit of their resilience:

'Half the time I think I kept going just because I didn't want to be seen as a quitter.' (S withdrew).

'I had some real setbacks this year – health and family problems. I've often thought of dropping out, but you hold on for a while and then it doesn't seem so bad.' (Y withdrew in the semester after this comment was made).

'I withdrew because I just felt worn down – I just couldn't find the energy any more.' (C had not re-enrolled by the end of the study).

'My experience was it just seemed one thing after another, problems with the computer, books not arriving on time, then I forgot one of the assignment dates and thought, that's it I just can't do it anymore.' (A withdrew).

Assessment Methods

Many of the students made comments about assessment methods. The comments seemed to revolve around at least 4 separate themes. The most common of these was the idea of student control or choice in assessment. The others were a conception of the relevance and/or transparency in the assessment method, views about assessment type/ and the need for assessment to reflect an appropriate level of reward for the extent of effort.

Regarding the first theme, the majority of respondents appeared to like and appreciate a level of control or self-determination in the selection of topics and presentation of material for assessment. Some illustrative comments were:

'In (unit code) we got to pick our own essay topics. I chose something I was doing at work, and found it easy because it seemed to be more relevant.' (J persisted).

'We chose our own research theme and answered the questions in each chapter of the study guide in relation to the theme. We got to the end of the chapters and the project was already almost finished.' (S persisted).

'For (subject) we have this major assignment at the end. Everyone does the same topic, if you're not interested in it then just bad luck.' (D persisted).

Another common theme was the type of assessment method and the timing of assessment tasks. Many had views that appeared considered and strongly held. The general consensus was that assessment was better staged rather than being dependent on a single major task:

'Having one big assignment at the end of the semester is nuts. You always keep leaving it and then at the end it's a mad rush. Two or three smaller assignments would be better.' (O withdrew).

'It annoys me that we have to wait for the essay question in some units. I'd like to know right from the start what it is I have to do.' (Z persisted).

'This structure makes the subject seem easier and helps us learn more.' (N's comment was in relation to a format whereby the lecturer scheduled a small number of individual students to prepare a tutorial paper each week. These papers were posted in the LMS as a basis for an asynchronous discussion, N persisted)

'Throughout the unit we had a series of practical exercises, it's like there's an evolution and it seems easier.' (J persisted).

There was also a marked scepticism about the fairness, appropriateness and usefulness of formal examinations:

'In (unit code) you have to pass the exam as well as the assignments. It's really got me worried.' (H withdrew).

'I have to travel an hour and a half to get to an exam centre, I'm going to be stuffed (colloquial for exhausted) before I even start.' (K persisted).

'I had never really sat a proper exam and was really stressed out, I thought seriously of withdrawing.' (B persisted).

'I don't think exams are a real measure of your knowledge – they're more a combination of luck and a test of your memory.' (P withdrew).

Although, essay style assessment too, was not without detractors:

'It'd be good to know the marking criteria for our assignments so we can understand what it is the lecturer is after.' (L withdrew).

Also, despite a general dislike of imposed requirements for online interaction, there was an acceptance of online methods, including asynchronous bulletin board type postings, if the effort was seen to be rewarded. Some representative comments were:

'(Lecturer's name) includes participation in online discussions as part of the assessment. It's good because it's 10% you don't have to get on the exam and it makes you participate.' (O persisted).

'Having the bulletin board as part of the assessment is good, because everyone has a go and it ups the quality of comments.' (D persisted).

V. EX POST-FACTO (REFLECTIVE) COMPONENT RESPONSES

The ex post-facto part of the study included responses from the 125 students who withdrew during the two years of the study – 2003 and 2004. The

previous ex post-facto study undertaken in 1986 by Osborne, Kilpatrick and Kember (1987), included the responses of 272 students. However, the results from the two studies are remarkably similar. The reasons given by students in this contemporary study were categorised in the same way as the previous one; external and time related reasons, personal (individual) characteristics, and university (institutional) related reasons—these were all further broken down into more specific categories as in *Table 5.43*. This table also shows the percentages of the different reasons by category for the first study (1986) and the second (as part of this contemporary study).

Table 5.43. Reasons Given for Withdrawal

CATEGORY	SUB-CATEGORY	1st STUDY 1986	2nd STUDY 2004
EXTERNAL, TIME RELATED	Employment demands/changes	24%	23%
	Family demands/changes	25%	22%
	Other personal constraints/changes	5%	7%
	Lack of Computer Access	Na	4%
	Sub-Total	54%	56%
PERSONAL	Study/Computer Skills	10%	13%
	Wrong Choice	3%	6%
	Problems from late enrolment/start	2%	0%
	Lack of motivation	2%	7%
	Sub-Total	17%	26%
UNIVERSITY	Administrative problems	6%	3%
	Problems with course materials	8%	1%
	Poor quality of support	9%	5%
	Difficulty/workload of course	6%	9%
	Sub-Total	29%	18%

VI. OBSERVATIONS AND SUMMARY

Observations

Generally the instruments appeared usable, and were well received by the respondents. By spreading the questionnaires over four semesters it was possible to put a large number of questions to the students. The response rate was good—both from the perspective of the numbers opting in to the study and in the way most continued to return questionnaires. In fact it seemed that many students were glad that someone was taking an interest in their plight and many commented that they would be interested in reading the results of the study. Some students did not like the restrictions of the Likert style format and felt they needed to write notes on the questionnaires to explain why they answered in a particular way. Despite this very few made the decision to put ‘Don’t know’ or ‘Undecided’ on the forms.

Not all questions were applicable to all students and several put NA (Not Applicable) for certain questions. This was particularly the case for postgraduate students. For example the following questions did not often pertain to postgraduates and received numerous NA responses:

- L6) The level and amount of work required in the assignments is more than I expected
- L8) I almost always attend any face to face sessions offered by the University
- L9) The distance education unit staff members are friendly and helpful
- L10) I think WebCT is convenient and a helpful way to organise courses
- L12) The orientation program offered by the University was useful

The other apparent shortcoming in the design was the way in which the questionnaire did not allow any valid comparison between students who were studying predominately online or predominantly by traditional methods— it would seem that a comparison at the course (program) level was inappropriate. More granularity was needed, that is, a design whereby the results for individual units taken by students was recorded. However, the

whole debate is probably becoming an anachronism as Universities have whole-heartedly embraced online delivery with the assumption that it is a better way of providing distance education without requiring any hard evidence to support the transition.

As for the validity of the model questions and sub-scales, that is were the questions measuring what the instrument aimed at measuring, most of the sub-scales were acceptably reliable. The comments made by students meshed with their answers/statements for the scaled responses and there was a general consistency in the responses for each individual over the four questionnaires. However, some of the sub-scales seemed to require some modification. For instance, the set of questions designed to measure goal commitment included many items that had a negative response from most students. For example, these three questions;

F3) I think studying for a degree makes you a more rounded person
F8) I don't want to let others down
F10) I think it's a social advantage to have a degree.

received responses on the positive side of the scale from only 14% of respondents. And this set of questions;

F1) I've always wanted to get a university degree
F2) I think it's important to have a degree to get a job.
F6) The financial outlay makes it important for me to finish

received positive responses from only 17% of respondents – in both cases the results were evenly distributed between the withdrawn and persisting group.

The *Employer Support* questions seemed problematic too. Did most working students, even those who persisted, really mean that their employers didn't support them at all ...or were the items phrased badly? Perhaps the questions should have been less specific about 'support' and concentrated more on how the students' work environment allowed them to study. The fact that so many

in the sample were not employed or retired also brought into question the usefulness of the sub-scale.

Summary of Results

Demographic and Situational Characteristics

While there was not any single situational or demographic factor which correlated significantly with persistence, there was one combination of factors that was significant. Over 50% of males aged 30–39 and having an income of over \$300 per week persisted compared with an overall persistence rate of only 41%.

Model Factors and Subscales

As for the sub-scales comprising the factors in theoretical model, the results were mixed. Table 5.43 shows the relationship to persistence for the subscales making up *Entry Characteristics*. The subscales *computer experience*, *attitude to online learning* and *self-efficacy* show a significant positive correlation to persistence, *educational background* and *goal commitment* show a significant, though weaker relationship to persistence, and *preparatory course* shows no correlation to persistence.

Table 5.44. Entry Characteristic Sub-Scales and their Relationship to Persistence

Subscale	Spearman's Rho	Asymp. Sig.	Significant? Y/N
<i>Educational background</i>	.38	.002	YES
<i>Computer experience</i>	.82	.000	YES
<i>Preparatory Course</i>	.09	.210	NO
<i>Attitude to online learning</i>	.78	.000	YES
<i>Self-efficacy</i>	.70	.000	YES
<i>Goal commitment</i>	.46	.001	YES

With regard to the subscales comprising *Social Integration*—*family support* was strongly correlated with persistence, *employer support* showed no correlation, and *peer support* was correlated with persistence but the relationship was not as strong as that of *family support* and persistence (Table 5.44).

Table 5.45. Social Integration Sub-Scales and their Relationship to Persistence

Subscale	Spearman's Rho	Asymp. Sig.	Significant? Y/N
<i>Family Support</i>	.53	.000	YES
<i>Employer Support</i>	.05	.445	NO
<i>Peer Support</i>	.51	.001	YES

Among the sub-scales making up *Academic Integration*—*learning approach* showed an easily discernable correlation with persistence, *motivation* was not correlated in an expected sense, but persisting students showed a surprising tendency to have scores for this sub-scale distributed toward either end of the scale, whereas the students who withdrew had a sharp central tendency in their distribution. *Institutional interaction* showed a statistically significant difference in means between the two groups of students, with a particularly large difference in the mean ranks indicating a positive correlation with persistence (Table 5.45).

Table 5.46. Academic Integration Sub-Scales and their Relationship to Persistence

Subscale	Spearman's Rho	Asymp. Sig.	Significant? Y/N
<i>Learning Approach</i>	.83	.000	YES
<i>Motivation</i>	.03	.663	NO
<i>Institutional Interaction</i>	.84	.010	YES

The elements making up the *Extraneous and Adventitious Events* scale were quite varied in their correlation to persistence. The *distractions* sub-scale showed a strong negative correlation with persistence, but interestingly the *unexpected events* sub-scale showed little relationship to persistence. The

change in circumstances sub-scale showed a weak negative relationship to persistence was on the margin of statistical significance (Table 5.46).

Table 5.47. Extraneous and Adventitious Events and their Relationship to Persistence

Subscale	Spearman's Rho	Asymp. Sig.	Significant? Y/N
<i>Distractions</i>	.84	.000	YES
<i>Unexpected Events</i>	-.07	.641	NO
<i>Change in Circumstances</i>	-.08	.09	YES

Overall the new model developed for this study had some useful predictive value, leaving only 14% of the variance unexplained (as measured by the coefficient of determination). This was an improvement on models previously tested elsewhere.

Ex Post Facto Survey Results

The ex post facto questions on the questionnaire revealed that the reasons given for withdrawal by students have not changed significantly since the first study in 1986 and this most recent study. External, time related issues such as family and employment demands and changes remain the most often perceived problem. Personal factors such as the lack of computer skills or study skills have increased a little since the first study and university related factors have decreased marginally. The most interesting result of the reflective part of the study was the finding that students who had taken a preparatory course, while slightly more likely to persist, were much less likely to give a university related factor as their reason for withdrawal.

Chapter Six

ANALYSIS

This chapter will discuss the research questions by examining the results from the collected data informed by the literature and other comparable studies. The chapter is divided into five sections: the characteristics of the students, the experience of studying remotely: the model data and qualitative data compared, the principal reasons for withdrawal, and the implications of the results.

I. THE CHARACTERISTICS OF THE STUDENTS

The demographic and other situational characteristics of the students were not significant factors in their success. Age did not account for any difference between the persisting group and withdrawn group. The only apparent pattern of note was the better than average retention rate in the two age groups: 35–39 and 40–49. These age groups had a 53% retention rate compared to an overall rate of 41.5%. Generally, increased age tends to be associated with higher retention (Cullen et al., 1996), although in studies of mainly traditional, on campus students this age range (35–49) is more at the extreme of the total range compared to this study's sample where this subgroup is more in the middle of the range. This perhaps indicates that the effect does not hold when there are significant numbers of students over the age of 50 in a student population. That is, it could be that the 35–49 mid-career

age group tends to cause the effect in more generalised studies.²³

There was also a weak relationship between gender and persistence. Only 39% of females persisted compared to 46% of males. However, due to the skewed sample with regard to sex (78% were female) it would be unwise to make too much of this result. Combining age and gender, the sub-group consisting of males in the 35–39 age group was significantly more likely to persist (56% retention rate) than the remainder of the population.

Interestingly, this was closely followed by females in the 40–49 age group whose retention rate was 53%. The least likely sub-group to persist, dividing the sample in this way, were females in the 20–29 age group whose retention rate was just 29%.

Looking at the comments and open ended questions for these groups on the questionnaires, it appeared that many of the males were doing the study for career related reasons and were very motivated and willing to make sacrifices in their home life and usually had support of family members. The older female group comprised a number who had decided to study to restart a career after some time at home or who were working part-time while raising children. Others in this group were making a new start after a divorce or other life changes. The young females group was, more often than not, studying externally because family commitments or lack of funds were keeping them at home in a remote location.

Employment and *income* showed a weak correlation with persistence — those who were employed either full-time or part-time were a little more likely to

²³ The most recent statistics available from the Australian Federal Government indicate that less than a quarter of all tertiary students in Australia are older than 30 (Students 2003: Selected Higher Education Statistics, available at: http://www.dest.gov.au/sectors/higher_education/publications_resources/statistics/)

persist than those who were not employed or retired. The cost of studying was a common comment or response from the not-employed/retired subgroup. It seemed that this was a widespread issue, with some commenting that they were taking time off from studying while they saved some money to enable resumption of study in the next semester/year. A typical comment was:

'I'm really battling to keep up with the cost of postage, printing and photocopying' (N, a student not in paid employment who withdrew before the end of the study).

The remaining situational factors—*Study mode, course load (number of units)* and *field of study*—did not correlate with persistence. There was, however, a slightly lower persistence level of masters' students. This goes against the supposition that study experience should generally better equip students for independent learning. The small number of masters level students in the sample makes it unwise to attempt to generalise the result, though the majority of masters students did comment that this was their first attempt at distance learning and they were juggling studying and jobs—so perhaps their situation was not very different to undergraduates attempting distance education for the first time.

The few students who changed to mixed mode over the course of the study, complained in their comments on the survey about travel time to campus and that there was no acknowledgement or assistance by the university (for example: no preferential treatment for the selection tutorial times or efforts to schedule lectures on the same day) or funding assistance by the government. Some students said they were driving 12 hours a week to come to campus to study two units. Almost all of them mentioned the cost of studying this way, particularly the cost of transport. Many of this group lived in isolated areas with no public transport. Most of these respondents had decided on mixed

mode because they needed units to complete their studies, but would have preferred to be fully external.

Seven of the nine students who changed from studying remotely to on-campus did so because they found it too difficult studying externally, but were so determined to get their degrees they decided to move to Hobart or Launceston (Tasmania's principal cities) to attend university. It would appear that these issues are not unique to remote students in Tasmania. Similar problems concerning tertiary students in regional areas in Australia have been discussed in Dryden (2008) and Godden (2007).

II. THE EXPERIENCE OF STUDYING REMOTELY: THE MODEL DATA AND QUALITATIVE DATA COMPARED

Two of the model factors, *Entry Characteristics* and *Academic Integration* showed a significant relationship with outcome and many of the sub-scales comprising the factors, such as *educational background*, *self-efficacy*, *learning approach*, and *institutional interaction* also showed significant correlations. *Social Integration* and *Extraneous and Adventitious Events* showed a weak relationship with outcome as did some of the sub-scales such as *family support* and *peer support*. An examination of the results of the data collected for the model's evaluation together with an analysis of the responses to open-ended questions and comments of the students give some reasons behind the results of the model's evaluation. Perhaps one the most interesting results of the study was the way the significance of *motivation* manifested itself. The following sub-sections discuss these findings more fully.

Entry Characteristics

The *Entry Characteristics* of students was most definitely of significance. Entry characteristics for this study were defined much more broadly than simply

the educational background or entrance scores of students (although educational background was included). It was these other aspects such as measures of their *goal commitment* and *self-efficacy* that may have contributed to making the factor a more useful predictive tool. The Spearman's Correlation Coefficient (RS) value of 0.69 indicated a relatively strong statistically predictive value of *Entry Characteristics* in this study. This is in contrast to a considerable portion of studies of general attrition in higher education where only a small percentage of the variation between persisting and non-persisting students can be explained by entry characteristics (Woodley, Thompson & Cowen, 1992). This might indicate that either the factor is more significant in this study because of the way the measure was constructed or the factor is more influential with remote students than the general student population.

A. Educational background

Of the sub-scales making up *Entry Characteristics*, *educational background* showed the most significant relationship to persistence. However, a closer look at results indicated that almost all the variation could be explained by the greater likelihood of those who had post secondary educational experience being more likely to persist (67% of students with a score of five on the scale persisted). Previous studies have indicated clearly that the first semester is the most likely stage when a student will drop out (McGivney, 2003). So it would seem that students who can get over the initial hurdle, even if their successful first semester experience is separated by time or undertaken at a different institution, are more likely to persist.

However, there were sufficient examples of students with little academic experience who persisted to justify the university's policies of mature admission. Of the 17 students who identified as not having the standard

qualifications for admission to the university, nine were still studying or had graduated at the end of the survey period. K for example had only four years of high school and said:

'I wasn't sure I'd be able to cope at University. I wasn't very good at school, but I've become fascinated with the past and how we've got to live like we do today. I really want to finish but I'm going to miss studying, maybe I'll go on to do a masters' (K graduated in 2003).

and B commented:

'I didn't do very well at matric and was told that's it, you've failed, you won't be able to go to university' (B was still studying at the end of the survey).

B. Computer Experience

Computer experience showed a strong relationship to persistence and a good level of internal consistency. Interestingly, very few students answered question B9 *'I participate in online chats'* and B10 *'I participate in online conferences or bulletin boards'* in the affirmative. Only four female students answered question B4 *'I play computer games on my own computer (or a friend's)'* or B5 *'I play games on the Internet'* with a response other than 'never'. While most students had used computers, some mature students were surprised at the level of computer knowledge expected by the university and a number of students (4%) cited the lack of computer experience as a principal reason for dropping out. Many students praised the preparatory courses offered by the university because it 'got them up to speed' with their computer skills. It would appear both from students' comments and from the results of the scaled questions, that a lack of computer skills and experience is a distinct disadvantage, but one that can be overcome relatively easily with a small amount of training and assistance. In several cases, enrolling at university forced students to begin using computers and opened up opportunities outside the study arena, as H comments:

'I was so nervous about using computers when I started, but after doing Unistart I found they weren't so scary after all. I've now got the internet at home and wouldn't be without it' (H was still enrolled at the end of the study).

C. Preparatory Course

Whether a student had done a preparatory course was not related to persistence in a significant way. This lack of difference between the persisting group and withdrawn group of students probably should not be any surprise, and probably does not indicate any lack of effectiveness in these preparatory courses, as the students who take these courses are usually the least prepared students. The fact that the correlation with persistence is relatively neutral might indicate that these courses effectively bring the 'at risk' students up to the same likelihood of withdrawing as the rest of the student population. Certainly the attitude of students was very positive in respect to these programs. Comments such as this by J was representative:

'Unistart was excellent. It gave me the confidence I needed to tackle study after so many years out of school' (J graduated in 2005).

However, the result does cast some doubt on to whether it is a necessary component of the *Entry Characteristics* factor in this model, as it contributed nothing to the predictive capacity of the model.

D. Attitude to Distance and Online Learning

Attitude to distance and online learning also showed a positive correlation with persistence. Most students agreed that you could learn as much in distance course as a classroom one but many students made comments that gave the impression that they were missing out on some more intangible

benefits of attending university that were as important as the content and the knowledge required to pass units, as put here by M and N.

'I think contact with other students is an important part of uni study so I feel that I haven't got the most from my experience' (M graduated in 2004).

'I studied on campus for my first degree and now I miss the Uni lifestyle and camaraderie' (N withdrew).

Most who made comments thought distance education harder and took more effort on their part despite having the same potential to learn. This comment by L encapsulates the sentiments:

'Even though I feel I have to be more motivated and organised, I find that I'm learning a lot more than when I was on campus because I tend to read and research more to ensure I know my subject and will pass' (L graduated in 2003).

This sub-scale showed lower internal consistency than many of the other constructs and this was mainly because almost all students answered 'strongly disagree' or 'disagree' to question D2 *'I enjoy participating in online chats or conferences with people I may not know'* even though they might have answered in the affirmative to the other three statements. It was also surprising to see how many students did not believe (sometimes quite strongly) that distance learning was as effective as traditional classroom attendance, but they were willing to attempt it because it fitted with their circumstances even though it was, for them, a 'second best' choice.

'Remote study is not the ideal arrangement but it fulfilled a need for me and allowed me to continue working and studying at the same time.'
(C graduated in 2003)

'I'm just studying by distance because it suits my current situation – I couldn't really do it any other way – but if I had a real choice I'd do it on-campus.' (S was still enrolled when the survey finished)

'Distance has suited me because I have a small child and it is flexible but I don't think I would do it again'. (G withdrew, semester 2, 2003)

'I am enjoying it but would rather be studying on campus. I think I would benefit from student interaction and going to lectures, but it fits well with me being a mum and means I can accept casual work'. (J graduated in 2004)

E. Self Efficacy

Despite the less than ideal level of internal consistency (0.62) in this sub-scale, *self-efficacy* had a strong relationship to persistence ($r = 0.68$). It was clear that those who were more confident in their abilities and confident that their success was largely due to their own abilities and efforts did better than those who were not. Many students seemed to have grave doubts about their ability to succeed and were doubtful they would be treated on their merits.

Unfortunately many had their prophecies fulfilled and 85% of students with a score of 10 or less on this scale (out of a maximum of 16) did not persist.

Comments indicated that many were anxious about being seen as inadequate or ridiculous at university and thought that studying externally might lessen this risk for them:

'I never really thought of myself as the sort of person who'd go to University. But I really want to get a decent job. I just hope I don't make a fool of myself. (P had withdrawn by the end of the study).

Considering so many students expressed these misgivings, it is interesting that so many were willing to try studying at university. Fortunately, not all students' premonitions of failure came true. A small number of students who had very poor perceptions of their abilities seemed to grow in confidence by the end of their first year. While only 18 students (out of 210) who had scores of below 10 on this scale had persisted at the end of the study, 12 of these had

graduated or were due to graduate in the next semester at the completion of the survey. One of these students commented:

'I'm so glad I persevered. I can see the light at the end the tunnel now, but when I first started it was so daunting – I think I've come a long way in the last five years'. (K graduated in 2004).

F. Goal Commitment

Goal commitment was only weakly related to outcome. There appeared to be a problem with the construction of the *goal commitment* sub-scale. Two statements; F3 *'I think studying for a degree makes you a more rounded person'* and F10 *'I think it's a social advantage to have a degree'* were viewed very negatively by most students, with only seven responding at the positive end of the Likert scale. Very few answered F8 *'I don't want to let others down'* in the affirmative either. This is in stark contrast to the results of Kember and his colleagues' work in Hong Kong where this was a major concern of students (Gow, Balla, Kember & Hau, 1996). There is also a body of research indicating that Hong Kong culture is very family oriented. Children are demonstrably supported in their studies by parents and children are socialised to believe that making an effort in their studies is owed to their family (Leung, Lau & Lam, 1998). It would appear that questions to measure this construct with Australian students need to be better formulated. A search of the literature produced no research specifically concerning the goal formation or goal commitment of Australian students. Perhaps this is an area requiring attention.

Most students appeared to be aware that studying by distance learning at university was going to require a high level of commitment:

'I know it's going to be hard but I'm determined to make a better life for myself and my children' (L was still studying at the end of the study).

However, it was surprising that a large number of students did not really seem to care whether they finished, indeed 61% of students responded to the statement F7 '*I really want to achieve my goal of graduating*' in the negative. One has to assume they were simply happy to try the experience and see where it took them. Interestingly, many of these students actually succeeded—35% of students responding negatively to the same statement (F7), completed their degree or were still enrolled when the survey finished.

Many students, in their comments, indicated that while they had decided to study, it was not their highest priority. They seemed to be content to just do the minimum to pass in order for studying not to interfere with the rest of their lives, for example:

'I have to say uni is my lowest priority. I've got work and family commitments that take precedence here and now' (F did not re-enrol).

Social Integration

Overall social integration contributed little to the model, although two of the three sub-scales—*family support* and *peer support*—were statistically significant. Employer support was not significant. Similarly, in the open-ended questions, students tended to mention the importance of family and friends, but there was a general feeling that employers were not supportive, and it seemed that students did not expect them to be so. Many of the comments made by students concerning the *Social Integration* of their studies indicated that when personal or work situations demanded extra time and emotional input it was easy to lose the momentum and let study routines slip. Some illustrative comments are:

'Work commitments have made me reduce from two units to one' (S withdrew in 2002).

'My problems are pressure of work/commitments to children/lack of support from husband' (A withdrew in 2003).

'I find combining sport, work, family and study commitments very challenging, and at times, overwhelming. However, my determination to succeed has enabled me to continue and I am proud of my achievements to date' (X graduated in 2004).

Many students took account of their other commitments and organised themselves accordingly. N (still enrolled at the end of the study) said:

'I've asked the family for more help – mum for childcare, my children do more of the housework and I've realised the house doesn't have to be spotless!'

and H commented:

'To cope I've just had to spread myself a bit thinner' (H remained enrolled).

A small number of students did not divulge they were studying to their family, friends or employer for reasons similar to G's—*'I just thought I'd see how I went before I started telling everyone I'm studying – I don't want to end up looking silly'* (G later told her family and friends. She was still enrolled at the end of the survey).

G. Family Support

The results of the *family support* sub-scale showed a marked difference in the mean scores of the two groups with the mean score of the persisting students 21% higher than that of the withdrawn students. In the open-ended questions it was evident from the responses that many students had considered the level of support they would need from family before they enrolled, believing this would be important for their success.

'I explained I was going to start studying and my family was very supportive. I knew I wouldn't be able to do it without them' (K graduated in 2003).

This sub-scale used five questions. The first *'My family encouraged me to enrol'* was answered in the affirmative by just under half of the respondents with only a few percentage points difference between men and women (50%, and 48.8% respectively). Of those who persisted, 67% answered this question in the affirmative, whereas only 36.8% of those who withdrew did so, which in itself would indicate that a perception of encouragement and support of family members is helpful. In the second question, *'My family has really helped me'*, 37% of non-persisters answered in the affirmative whereas 69% of persisters did so, and with the question *'My family supports my studying because they think the qualification is important'* the results were 38% (withdrawn) versus 69% (persisting). The responses given to these three questions were consistent among individuals. With the question *'My spouse/partner gives me support in my studies'* 35% of withdrawn students answered in the affirmative compared with 61% of persisters; and 8% of all respondents answered 'Not applicable' to this question. The last question *'My spouse/partner becomes annoyed when I spend too much time studying'* elicited positive responses from 60% of non-persisters and 26% of persisters. Interestingly, the non-persisters affirmative answers were divided very unequally between the sexes with 84% of those answering in the affirmative being female, which would appear to support other studies (Hagedorn, 2000; Furst-Bowe & Dittmann, 2001) indicating males tend to receive more support from their female spouses/partners than females receive from their male partners. The open-ended questions would also appear to support this conclusion. The following comment from B is representative of those from males;

'My wife's very supportive. She tells me to stop playing computer games and get on with studying' (B received his degree in 2005).

Whereas, the following from L was typical of comments by females;

'I feel guilty not spending time with my husband, and I don't feel I can discuss uni with him' (L withdrew).

While many women and some men lamented the lack of support from their spouse or partner, in the few cases where parental support was mentioned the tone was invariably positive. Lack of family support was often mentioned but simply accepted—it was considered just one extra thing that made study difficult:

'The main issue is potential burnout—with 40 hours plus at work, wife and three children and four hours volunteer work plus 25 hours a week study'. (O kept going and was about to graduate just as the survey ended).

'I am hanging by a thread and feel that the cost of the course economically and the difficulty of managing studies and a family is huge' (G withdrew after two semesters).

A marked difference between this study and that of Kember's (1995) was that neither social advancement nor family pressures and expectations seemed a spur to persisting. In contrast to the Hong Kong students in Kember's study, most of the motivation for Australian students seemed to stem from self-fulfilment or employment aspirations. This is perhaps not surprising given the cultural differences between the two countries regarding family involvement in educational achievement.

H. Employer Support

Because such a large number of the responses from students in both the persisting and non-persisting groups were negative, the construct was not statistically useful in identifying a correlation between *employer support* and persistence. However, some patterns could be discerned in the cross-tabulations. For example, with the responses to the first statement for this sub-scale H1 *'My employer encouraged me to enrol'*, 6.4% of students who withdrew

answered in the affirmative and 22.3% of persisting students answered in the affirmative. The second question in this set H2 '*My employer has really helped me*' elicited affirmative responses from 6% of the withdrawn students and 14% of the persisters. In the final question, '*My employer has been supportive of my study*'—11% of withdrawn students and 21% of persisting students answered in the affirmative. Also, a significant number of students (around 30%) answered 'not applicable' or left blank both these questions, about the same proportion of students who were not employed or retired and this may well have had an impact on the usefulness of the construct.

It would appear, therefore, that *employer support* was not statistically significant in regard to outcome because there was a perception amongst most students that employers were rarely supportive of their studies. Indeed, many of the comments indicated that students persisted despite indifference or even obstruction on the part of their employers. While many students were studying to advance their career prospects (48% said studying was relevant or related to their job or employment prospects), from the comments it was evident that many were hoping a degree would let them change jobs or career path. Very few students were studying because their employer required it or suggested it (4%). In those few instances where this was the case, the students did not seem to expect the employer to support them materially or emotionally. This was quite a dissimilar result to Kember's 1995 test of his model and might reflect some cultural differences between Australian and Hong Kong students and study environments. It might also indicate a change in employees and employers attitudes over the intervening 20 years. However, the pressure of working and studying were often mentioned by respondents:

'Interesting but particularly challenging this semester due to demands of extra workplace commitments—feeling stressed' (D completed and graduated).

I. Peer Support

Like *family support*, *peer support* was correlated with outcome. Sixty-one percent of those who withdrew had scores on this sub-scale in the bottom half of the values (six or less out of 12), whereas 79% of those who persisted had scores in the top half (scores of seven or more). From the comments made by respondents it would seem that friends were both a potentially damaging source of distraction and valued resource. Friends who had studied or who were also studying at university were a valuable source of practical and emotional support. Not having support and encouragement, from friends was certainly considered noteworthy and was often mentioned by respondents:

'My friends are unconvinced and disregarding that I'm doing something important' (K withdrew in 2004).

It was obvious from the results for this sub-scale that *peer support* in a distance learning context is complex and varied and the questions in this survey did not go very far in teasing out the details of the interactions between students studying externally and their friends.

Academic Integration

Academic Integration was the most significant of the factors in the model. Of all the sub-scales in the survey, the two to show the most marked difference between the persisting group and the withdrawn group, partially comprised this factor. These two sub-scales were *learning approach* and *institutional interaction*. The other sub-scale—*motivation*, did not correlate with persistence on the surface. However, one of the most unexpected and revealing findings of study concerned this sub-scale. It would seem from this

study, *motivation* as measured in this study was not an appropriate construct for predicting persistence, rather a more general construct measuring the *level* of a student's motivation, rather than the *type* of motivation, would be more useful.

J. Learning Approach

Learning approach was strongly correlated with outcome. The difference in mean between the two groups was the greatest of all the sub-scales in the study. The single item in the construct showing the highest correlation was J14 '*I like the in-depth learning at university level*'. Over 75% of persisting students answered this in the affirmative whereas only 30% of withdrawn students did so.

There was also a cluster of questions revolving around communication with others about their study that showed a high level of significance. These were: J5 '*I benefit from working with other students in the class*', J6 '*I meet with other students to study*', J9 '*I ask questions in study schools or using email or internet chat*', J10 '*I volunteer to answer questions in online tutorials/study schools*', J11 '*I meet with my lecturers on campus about the unit*' and J13 '*I communicate (talk, phone, email, etc.) with my lecturers/teachers regularly*'. All these items had strong correlations with persistence. Both successful and unsuccessful students often commented about the difficulties regarding feeling isolated, but it was the persisting ones that tended to make comments about what they did to overcome this sense of isolation, for example:

I managed to start up a study group in my area even though it was difficult to find out who else was studying and to organise a place to meet. (L graduated in 2004).

But unfortunately, to ameliorate this problem it would not simply be a matter of suggesting that struggling students pick up the phone. A difficulty in contacting lecturers and the university staff generally was an often made complaint (see below under *institutional interaction*).

Those who took a deep approach (Marton & Säljö, 1976) to their studies seemed much more likely to succeed at distance courses. However, it often meant that they needed to spend more time than they could comfortably manage. Even persisting students said that when they were getting good assignment and exam results they sometimes felt like dropping out because they were in a constant state of high anxiety due to the stress of keeping up all their commitments.

‘When an assignment’s due and I have to do something else for work I keep worrying about using up precious time I could be using to study’ (Z was still studying at the end of the survey).

A common thread running through the comments made by successful students was that they had to be well organised to meet deadlines, take responsibility for their own learning and develop good work habits to get through:

I go in bursts. It’s easy to put the books aside and forget about it for a while and then before you know an assignment is due and you haven’t done any work. You’ve got to stay focused and organised. (K graduated in 2004)

However, they often said that all their efforts were not necessarily reflected in their marks, and they felt they had to put in more effort than traditional students to get the same results.

‘I just don’t get it. I put in hours and hours and still only scrape a pass. I’m getting quite disillusioned. I’ve talked to the lecturers on the phone but they’re vague and really no help at all’ (A withdrew in 2001).

It was a commonly held belief that they had to read more than those doing traditionally delivered courses to make up for the absence of live tutorials and lectures. Some thought the extra reading helped their assignments but did not contribute to exam success:

'I'm my own worst enemy. If I feel I don't understand something, I read and read all about it and hassle the lecturers. They're probably sick of me. Often all this doesn't pay off in exams because I can't write a quick summary of the main points and leave out the full explanation' (M was still studying at the end of the survey).

There were contrasting views to this, with some respondents believing they did better at examinations because they had read widely and could choose to answer a wider range of exam questions than someone who just swatted for the minimum number of topics. Even those who took a surface approach (Marton & Säljö, 1976) and passed, acknowledged that they were less engaged and motivated, B's comments are illustrative:

'For the last unit I did the minimum to do the assignment and then didn't pick up a book until just before an exam and then read some of the notes and a bit of the text book. I passed, but thought this is a load of crap, what's the point, I hadn't learnt anything and I still got a pass' (B did not re-enrol).

It is probably unsurprising that *learning approach* is so pivotal, but what was interesting was the extent to which students perceived that *learning approach* was not something innate – they described how they took different approaches with different units depending on the subject, lecturer and content. An often voiced opinion was that some units were easier to 'get into' and that some were structured better than others. Many of the students' comments seemed to support research indicating that online courses should be designed to encourage a deep approach. For example, courses with activity plans and clear, assessable learning outcomes were highly regarded. Students opined that they would like the format of online courses to be the same and

the provision of materials to be consistent across units. However, they seemed to be quite happy for the content and assessment tasks to be presented differently — several students doing more than one subject remotely, commented that they liked the variety in assessment methods.

Most students who took a deep approach, whether they did or did not persist, seemed to feel that they had gotten something out of the course:

‘I love studying but am finding it difficult. Although, it has made me learn a lot more about my subject of interest than I would have by myself’ (N was due to graduate just after the completion of the study).

K. Motivation

The results for *motivation* were the most interesting and complex. In Kember’s (1995) model a similar construct was termed ‘motivation type’. The aim of the construct in this study was to formulate a measure for motivation quality (intrinsic or extrinsic) as described by deCharms (1968), Deci (1975, 1981) and Deci and Ryan (1985, 1991, 2000), rather than a degree or level of motivation. The deduction based on these theories was that the type of motivation of the student impacts on the quality of learning and consequently on persistence (Sachs, 2004). The construct was, therefore, an attempt to gauge the motivation type of students with regard to their studies at university. One end of the scale was to indicate principally intrinsic motivation — that is students were motivated to study because they found it inherently interesting and enjoyable or, at the other end of the scale, principally extrinsic; that is, students were motivated by separable outcomes (such as getting a better job, doing it just to acquire credit towards a degree program or to satisfy other obligations). The results in this survey seemed to indicate two things, first that studying remotely was an inherently de-motivating activity no matter the type of motivation the students had, and second, and perhaps most

interestingly, the type of motivation was irrelevant to retention. The quantity or extent of the motivation, not whether it was extrinsic or intrinsic, was the important aspect of motivation in relation to persistence. The students who could point to reasons that kept them focused, on track and committed to their goals were much more likely to succeed than those who showed an ambivalence or uncertainty regarding their motivation.

The scale for *motivation* was set up with the assumption that positive answers to particular questions would indicate an underlying intrinsic motivation and these responses, were given a high value. Positive responses to other questions would indicate an underlying extrinsic motivation and negative responses to these were given a low value. This produced a scale where a higher number indicated, theoretically, predominantly intrinsic motivation whereas a lower number indicated predominantly extrinsic motivation. A statistical analysis of the two groups of students—persisting and withdrawn, using this scale showed no correlation with persistence. This unexpected result gave cause for a more detailed investigation of the data.

The differences in the kurtosis (pointedness) of the curve of the plot of the scores between the persisting students and the withdrawn students, indicated that the data should be plotted. The plot showed that the persisting students tended to be gathered at the extreme ends of the graph (see *Figure 5.1*), indicating that it was the decidedly intrinsically motivated or extrinsically motivated students that were more likely to persist. The withdrawing students were gathered in the middle of the plot, their uncertain or uncommitted responses giving median score. It was decided to recalibrate the scale, ignoring the idea of extrinsic or intrinsic motivation but rather simply the extent of the motivation. The original scaling is indicated in table 6.1.

Table 6.1. Original Scaling for ‘Motivation Type’

Questions K1-K6 ‘Extrinsic Questions’	4 = Strongly Disagree 3 = Disagree 2 = Agree 1 = Strongly Agree
Question K7-K12 ‘Intrinsic Questions’	1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

Table 6.2. shows the modified scaling method for all the motivation questions.

Table 6.2. Modified Scaling Method for Motivation Construct

Question K1-K12	2 = Strongly Disagree 1 = Disagree 1 = Agree 2 = Strongly Agree
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The numeric coding of the responses were transformed (Table 6.2) to produce a scale to estimate the degree of motivation rather than type of motivation (it should be noted that the phrasing of the original questions was not formulated with this purpose in mind). Analysing the results in this way produced a pronounced change. The mean rank of the persisting students was 63.7, but the mean rank of the withdrawing students was 167, producing a statistically significant result. This tends to indicate that it is the level of motivation that is the important aspect to motivation, not the type of motivation – students just need to be motivated – the types or reason for their motivation seems irrelevant to their decision to persist. There were a number of comments given by students to back up this view;

‘Even though I find the course interesting, sometimes I just wonder if it’s worth all the effort’. (B withdrew, 2002).

‘I find studying a real chore, but I know it’s going to help me in the future so I just keep pushing myself.’ (V graduated, 2003).

From the comments made by students in the survey it was also evident that those who had strategies for staying motivated, or keep pushing on when not feeling motivated, were more likely to succeed. Some representative comments are;

About half way through an assignment I think this is too hard—I just can't do this by myself. Then I think I can't drop out now and waste all the effort I've put in so far and somehow I get through. (G graduated in 2003)

Studying like this is much harder than I thought it would be. It's very difficult to stay motivated and focused. (H withdrew)

The design of this survey was insufficient for teasing out the strategies, personality traits and circumstances that helped maintain motivation in students. It is no doubt an area worth further consideration, especially in the context of the prevention of attrition.

Motivation, using the modified version of the scale (Table 6.2) was also, and perhaps not surprisingly, closely linked to *self efficacy*. Using Spearman's correlation coefficient (RS) gave a result of 0.64. Motivation was also correlated to some extent with *goal commitment* (RS of 0.39). The comments indicated that many students thought studying externally took either a particular type of personality and/or extra effort and that studying this way had inherent difficulties.

'As a remote student I find that generally you need to be more focused, determined and resilient than on-campus students.' (A had completed the requirements for his degree at the end of the study)

'I would recommend it to anyone who is motivated and independent'. (S graduated in 2004).

'Despite it being an arduous journey, I've gained insight, a broader perspective and mental stimulation.' (P was still enrolled at the end of the study).

'It's really hard to stay motivated. You just feel you're working with no real feedback – you could be on completely the wrong track.' (T completed the requirements for her degree in 2002).

L. Institutional Interaction

Institutional Interaction was strongly correlated to outcome. There was a marked difference in both the mean score and mean rank between the two groups of students. The difference in mean ranks is particularly pronounced, suggesting that institutional interaction is both an important component of academic integration and important as a factor by itself. The open questions related to this sub-scale elicited more responses than any others and the comments sections on the surveys received more unsolicited material than any other topic. It was clear that institutional interactions were upper-most in the majority of students' minds. A feeling of detachment from the institution and a fear of the unknown pervaded the free responses given by students.

The questions comprising the sub-scale had good internal consistency. All of the individual questions showed at least some degree of statistical significance with regard to correlation with outcome. The question with the least significance was L10 *'I think WebCT is convenient and a helpful way to organise courses'*. While opinions varied considerable regarding WebCT, it did not seem to matter whether students liked it or loathed it, they did equally well. However, generally the feelings were positive regarding the technology, this question L10 and the other regarding WebCT, L17 *'I find WebCT easy to navigate'* received a majority of positive responses. Many students mentioned WebCT positively in their comments, for example;

'I like using WebCT as a study tool because I can work at my own pace, I keep up to date without having to travel to campus.' (J persisted).

'WebCT helps keep me organised and makes me feel I'm part of the class.' (N graduated).

The item in this subscale least correlated with outcome was J18 *'I enjoy participating in online chats or conferences with other students from my classes'*. A minority of students from both the persisting and non-persisting groups answered this in the affirmative. The few that did answer these questions tended to be from the younger age groups (<25). The open ended answers shed some light on this phenomenon, these comments are typical of the many comments received regarding open online communication;

'I feel I'm really putting myself out there when I use online chat. I don't like being so exposed and vulnerable.' (Z withdrew).

'I think chat rooms are a waste of time – it's such an artificial pretence at conversation.' (N persisted).

'I've had some unpleasant experiences with other students being very scathing regarding my comments. It puts me off communicating this way. I bet they wouldn't be so mean face to face.' (Y persisted).

'I don't like chat rooms or discussion boards. It all makes me uncomfortable conversing with some faceless entity.' (K withdrew).

'Chat rooms are what you make of them. You've got to be prepared to put yourself out there!' (N persisted).

The responses regarding the Library's service were mostly positive. The few that did give negative responses to these questions were most often those who withdrew, so it would seem that a negative experience of library services could be a factor influencing persistence.

'A very positive experience made possible by everyone's professionalism. I can't praise the remote library service enough. They are the make or break link.' (M was due to graduate after the final semester of the study).

In the comments and open ended questions, 22 students mentioned problems with the Library service or materials. The most common issues were the size of electronic reserve files, the cost of printing out materials and the difficulty of obtaining monographs on reserve. Some representative comments were;

'I want a chapter and it's often not sent until after the assignment is due or I get it and it isn't relevant.' (A withdrew)

'It is difficult to get useful access to book materials held in reserve in the library.' (M persisted)

'There aren't enough copies of recommended texts in the library making it necessary to buy a lot of expensive books.' (H withdrew)

'The cost of postage on returning Library books is almost impossible for me to afford' (L withdrew)

'I'm disappointed with the lack of materials available on the Hobart campus for my course (all in Launceston). Major readings should be on eReserve. It's also annoying that we have to buy such expensive texts.' (N persisted).

'I found online frustrating as large graphics take forever to download.' (G withdrew).

'Internet resources are no substitute for a good library.' (B persisted).

A common thread in students comments that had not been a significant consideration when formulating the survey was the cost studying externally. Twenty-eight percent of respondents made some mention of cost, many believing that studying by distance or by flexible learning methods was costlier than by traditional methods. This was because students thought they

had additional costs that they had to outlay to compensate for not being on campus. Some said they had not taken into account these costs when they first enrolled. These costs included extra printing, stationery, internet use, photocopying and the cost of a computer. Students said downloading lecture notes and articles and printing them either at home or on campus was costly.

'I find studying remotely very expensive. I work part-time and don't get any youth allowance, so going to study schools and paying for printing and photocopying are a big part of my budget'. (O persisted).

Many also said that as distance students they really needed their own computer and internet connection whereas on campus students could probably manage without one. They also had to purchase a printer – and the cheaper computers, such as ink jets, cost a lot to use as ink cartridges were so expensive. Many would have liked a laser printer but could not afford one. Many also said when they travelled to campus they spent considerable time and money in the library photocopying articles and other materials because they were never certain exactly what it was they might need, so they tended to over compensate by photocopying most of the reserve materials.

Some students thought that either because of the increased costs or a perceived lack of service, they should have a reduction in fees.

'I don't think remote students should have to pay as much as on-campus. We don't get half the services, we have to do all the work ourselves. Why do we pay the same?' (U withdrew).

'It must be cheaper for the University to have remote students – I don't understand why we have to pay the same HECS fees' (H persisted).

'I've studied at a UK University by distance and only had to pay about a third the fees compared to on-campus students, but here I pay the same as on campus students but don't get the services.' (K persisted).

The questions in this sub-scale regarding communications with the lecturers and the administration of the university elicited more negative responses than positive ones. Students often gave lengthy and considered responses to the open questions on this topic. The general tone of the responses, whether negative or positive was that students tended to feel isolated and out of touch.

'The whole experience is very isolating and because there are no classes it is easy to fall behind'. (B persisted).

'This is a very lonely, isolated way to study, I wouldn't do it again'. (G persisted).

'You feel very disconnected from the staff and they can be hard to track down'. (A withdrew).

'Much too isolated – it would be improved by contact with the other students and greater input'. (D persisted).

'Isolation is the main problem. No fellow students within 90 kms and despite emailing lecturer I get zero interaction except 1-2 study schools per semester.' (S withdrew).

'I find it difficult when I can't talk to my lecturer as isolation makes things seem more difficult than perhaps they may actually be.' (J persisted).

Many also felt that proper attention wasn't given to distance students generally, but the perceptions about communication were inconsistent and seemed to vary considerably between lecturers and schools. Students appeared to be very appreciative of study schools when they were offered;

'The parochialism of the faculty is at times frustrating. Because I'm in the south and the Faculty of — is in Launceston I feel marginalised. Conferences, seminars and meetings are never held in Hobart unless we do it ourselves. I certainly don't feel valued and no interest is taken in me as a remote student.' (O withdrew).

'I suppose it doesn't take much to put me off. I was having problems at work. I rang the lecturer and he wasn't very sympathetic – basically saying it was up to me.' (N withdrew).

'I don't like to phone lecturers –they're hardly ever there anyway. I email them but it can be days before they get back to you.' (F persisted).

'I am studying for a double major in — and I find the support and response I receive via both email and in person from lecturers extremely helpful and consistent. Library help is fantastic with online book ordering/photocopying etc. staff are marvellous and very efficient.' (Y persisted).

'The staff and lecturers are great at replying to your requests' (P persisted).

'I find it difficult to know what is required – I'd like to be able to talk to lecturers face-to-face.' (A withdrew).

'I found my first year the most difficult as I had little to no contact with my lecturers and attempted to do it all on my own. I very nearly withdrew on several occasions.' (Z persisted).

'It is difficult to be motivated without person to person contact. Also there is inadequate feedback when assignments are returned. If an answer is wrong it would be helpful if the lecturer told you what the right answer was.' (E withdrew).

'I enjoy studying by distance. I find the study schools help a lot but some subjects don't have enough.' (Q persisted).

'In some subjects if you have a problem lecturers will ring you and talk you through it till you understand. That's great it makes it easier to learn.' (H withdrew).

Students were not just concerned with a lack of communication from the university, they also lamented the lack of student to student contact. Several thought the university could do more to foster student to student contact;

'I'd like to get together with other students to see if they're having the same problems and issues'. (E persisted).

'Sometimes it seems like the university is afraid of allowing distance students to get together. I tried to get the contact details of other students and was told I couldn't because of privacy issues.' (J withdrew).

'It is hard to make friends. Email is not good and at the study schools you get to know them but they might not be at the next one.' (H withdrew).

'The course has no residential component and I find the lack of contact with other students a drawback – I do not find email contact as useful as discussing topics, ideas, problems as face-to-face talk.' (D graduated).

'I think I found the course boring because of a lack of interaction with other people – no one to bounce off.' (U withdrew).

'I hate distance education—I need face-to-face contact with humans who can re-assure me.' (P was still studying when the survey finished).

The attitudes and competence of university staff was a common theme in students' comments, as was systemic issues regarding the administration of units. In particular they often mentioned the failure of some lecturers to have available on the web the lecture notes prior to the lecture, but they also thought no account was taken of distance students circumstances by staff;

'Sometimes it can take up to 2-3 weeks into a semester for the WebCT to get up and running properly and your lectures to be provided.' (O withdrew).

'Lack of available resources to start, no information sent out more than 2 weeks into the unit. No communication after several and varied attempts at contact.' (S withdrew).

'On reflection I don't think my difficulties are a reflection on the university or the school but rather a poor reflection on the individual lecturer's commitment to the units delivery through distance education'. (G persisted).

'Some lecturers are very slow in organising their material, how much effort is it to put up the lecture notes?' (A persisted).

'Lecturers in all units should have to post lecture notes to WebCT if remote students are enrolled.' (B withdrew).

'Last year I tried to get an assignment date changed because of clashes. The lecturer in charge said remote students don't get preferential treatment. I think this is unfair because we are definitely at a disadvantage.' (C persisted).

'Lecturers and tutors treat you the same as on-campus students – there is absolutely no consideration given to remote students when it comes to assignments and deadlines.' (T withdrew).

Staff don't hand back assignments for months on end, they are very disorganised and WebCT doesn't work most of the time. The process is extremely frustrating. (V withdrew).

Not all students were disillusioned, and there were many positive comments. Students thought some lecturers clearly enjoyed what they were doing and embraced flexible learning. When this was the case, the experience for students was positive;

'WebCT in one of my units was very organised and thought out. It made everything so much easier.' (I persisted).

'This semester one of my lecturers gave us a series of short exercises submitted online. We got feedback within a week, it really made you feel you were on the right track.' (Q persisted).

'With one unit all you need to do is log in to WebCT and everything's there. I wish it was the same in all the units.' (K persisted).

'I've had fantastic support from the dist. ed. staff and the flexible library people who are quite amazing! I have been fortunate with my lecturers too who have all been terrific.' (L persisted).

'When you're having problems with an assignment it's always easier after you contact lecturers. This ease of contact must be beneficial for regular students.' (V persisted).

Another common theme discernable from students' comments regarding institutional interaction was their thoughts on the content of programs and units. About 20% of students mentioned workload, most saying that the amount of work required was too high. However, most often comments concerned the number of distance/flexible units available for study. There was a marked perception that it was difficult to accumulate enough credit through distance units and very often students had to take units they weren't interested in to complete their program.

'I found it difficult to finish a degree with the small number of units offered to distance students.' (P graduated).

'More units should be run as distance units – with WebCT it should be easy to offer most units taught on campus to distance students.' (N persisted).

'The only problem I had as a remote student was the lack of history and sociology units available by distance. I was unable to do as many as I needed and this will probably delay my graduation.' (L persisted).

Computing, internet and other technology services were issues for about 55% of students, and almost half of all students reported some difficulties when accessing flexible learning resources. These most commonly related to technical problems or shortcomings in the support received;

'Connecting to the university is not straightforward. Confusing and contradictory information given about requirements, setup and procedures.' (J withdrew).

'Webmail is slow and I often get error messages when trying to log in.' (H withdrew).

'IT services at the university seem poorly organised, there are too many different logins and passwords – nothing's ever simple.' (O withdrew).

To some extent these results should perhaps be viewed in light of Kennedy's (2003) work on readiness for online learning. She concluded that students have unrealistic expectations regarding the ease of studying online and believed they could fit online study into an already full schedule, and were more likely to leave tasks to the last minute when enrolled in an online course compared to a classroom based one. However, the consistency of responses, particularly with regard to connecting to the university through the internet to access materials or about computer resources available when students attended study schools, seem to indicate that there were some real problems that were chiefly the responsibility of the institution. Some representative comments were;

'Getting VPN up and running as a nightmare. There must be a simpler way to access resources.' (H withdrew).

'Some of the material in WebCT and eReserve takes at least 20 minutes to download. It's very frustrating.' (G persisted).

'Most of our materials are in PDF format. It's so buggy and difficult to work with – I can hardly ever get them on the screen let alone print out properly'. (B persisted).

'One of my lecturers put up most of our material in PowerPoint files. They take ages to download and often I can't open them.' (N withdrew).

A significant proportion of students said that in many of their units it was assumed that students had the internet connected at home, yet this was not a stated pre-requisite for enrolment. Many students commented that if they did not have their own computers and internet access, they said it was extremely difficult to complete their units. This was a financial impost for some

students, and several students said they got the internet connected just because of their study.

Other issues relating to *institutional interaction* but less universally acknowledged, were; difficulty getting to study schools, not enough study schools, inadequate background information for programs and units, and timetabling. Many of these issues have been reported in studies relating to tertiary students more generally (Zhai & Monzon, 2001; Jeffreys, 2007) and are not unique to distance education. However, the students in this study believed such issues to have a particular significance to their circumstances. Some representative comments were:

'I have difficulties getting to exams and study schools as I don't have private transport.' (I withdrew).

'I find that assignment timetables mean that you have a mass of work over 6 weeks which makes you fall behind in lectures. They should spread it out more.' (O persisted).

'I worry about meeting criteria which aren't transparent or obvious.' (J persisted).

'I wish there were more subjects available for distance students it can be hard to stay motivated if you're not really interested in the subject.' (G withdrew).

'I only did the unit because I had limited options at enrolment for distance units and needed to keep up my % level.' (F graduated).

'Far too much content to get through.' (S withdrew).

'More study schools needed on both campuses.' (A persisted).

'Too much study workload especially as I was trying to work at a job too.' (W withdrew)

In general, students seemed to have strong views regarding institutional interaction. They had an awareness of the importance of good institutional interaction in contributing to success in their studies. Almost all students had problems and issues regarding the university and their interaction with it, but some students viewed the interaction process as a two way channel and they had to make efforts on their part. This is not to say that the students criticisms were not valid—many of their issues have cropped up in other surveys conducted by the university and are widely acknowledged by the staff and administration. However, those students who, judging from their comments, took a passive attitude tended to be more likely to withdraw, whereas students who either accepted problems and tried to get around them, or who pushed to have their needs met, tended to be the ones who persisted.

Extraneous and Adventitious Events

Considerable effort was undertaken to devise the sub-scales to quantify the influence of *Extraneous and Adventitious Events* on students. The factor was comprised of three subscales – *distractions*, *unexpected events*, and *change in circumstances*. Unfortunately, the second sub-scale *unexpected events* ended up not being useful, as the method for calculating the scale was flawed. It was calculated by simply asking the student to state whether they had any unexpected events during the semester. Therefore the scale calculated simply the number, rather than extent of the events and did not provide a very accurate measure of the potential impact of the events in the lives of students. There was no correlation between the scores for this sub-scale and outcome. Consequently the utility of the whole scale for the factor *Extraneous and Adventitious Events* as part of the model was compromised as a third of the weighting was, in effect, noise.

M. Distractions

The distractions sub-scale showed a strong negative correlation to outcome. That is, the higher the 'distractions' score of students the more likely they were to withdraw. Some of the individual items comprising the sub-scale were very strongly correlated with whether a student persisted or not. For example, items M2 '*I prefer to spend time doing other things rather than study*' and M14 '*I am very determined to finish the course*' had Spearman's Rho values of over 0.85.

The open ended questions and comments were useful in establishing the range and extent of distractions that distance education students have. It is probably not surprising that distance students have a large range of distractions related to their family life, jobs and friends. Sixty percent of respondents mentioned paid work as a source of distractions. Fifty-five percent of people mentioned family, with children being the principal source. Many said they felt they needed to socialise to keep up their friendships but that they knew it made their study suffer. Twenty-eight percent of respondents made comments that seemed to indicate that they used distractions of work and home as an excuse not to study. Thirty-three percent of people said they did not have an adequate place to study, many lamenting the noisiness of their household or saying that other members of the household were inconsiderate regarding their study.

A consideration of the results of this subscale led to the conclusion that perhaps the subscale was either not named correctly or the formulation of the questions was misdirected. As it stood, a more accurate name for the subscale may have been distractibility. In a re-formulation of the questions an greater emphasis on actual events that were distractions might be more appropriate.

N. Unexpected Events

As stated above, the sub-scale for determining the impact of unexpected events was inadequately constructed. The problem with the scale probably lies with the inherent difficulty of weighting/quantifying the impact of events on individuals. The concept is subjective and it is difficult to conceive of a construct to adequately measure the phenomenon. As became obvious from analysing the responses to the open ended questions and comments, a circumstance that to one person is a personal catastrophe, to another is simply a challenge. Some students would withdraw because of adverse comments on an assignment while others would mount an appeal if they were discontented with marks and be happy for it to drag on for months continuing to study in the meantime. Some students withdrew because they started a different job or got a promotion, yet others would persist even though they had experienced some quite traumatic events such as being diagnosed with cancer or a partner dying. Here are some of the severe setbacks reported by students during the survey;

'Because of pregnancy and then loss after the miscarriage, I felt it would be easier to withdraw from the course. I plan to continue in the future though'
(L did return to study and was still enrolled when the study ended).

'Sickness in the family so I lessened my study hours'
(B graduated in 2004).

'I had to overcome depression – had to identify and draw on my strengths to overcome this.' (N went on to graduate).

'My father died at the beginning of last semester, and then I was diagnosed with breast cancer and my husband lost his job. But support from my husband and a determination to meet the challenge kept me going. Around the census date I thought of withdrawing but just took a deep breath and kept going. Problems do pass and I just told myself that this was an extreme and unusual situation.'

(C was still studying when the survey finished).

So it appears that some students are remarkably resilient. Indeed, several students saw studying as a way of coping with serious adversity;

'This has been a hard semester for me with some huge dramas. If it weren't for my study I would have curled up into a ball and dropped my bundle totally.'
(H remained enrolled throughout the study).

'This year I have had several close friends and relatives die so this has impacted on my normal coping abilities, but I'm determined to keep going.'
(P graduated in 2003).

'For me study is an escape from all my work problems and divorce and custody battles'. (L was still enrolled when the study ended).

However, in many cases unexpected events were the tipping point and students felt they had to sacrifice their study to allow themselves to get their lives back in order.

'I feel swamped and really depressed, I've split up with my boyfriend and can't see the point of continuing'. (K withdrew).

'I was involved in a car accident – two members of my family were killed. I've had to deal with my injuries, my grief and loss.' (Y withdrew).

While this construct for the quantitative component was not particularly useful, the qualitative aspect of the research did afford some insight. Already, in Chapter 5, the theme of resilience has been considered. From the students own comments regarding unexpected events, it appeared that the ability of students to recover quickly or 'bounce back' from external situations that presented as being unusual was closely aligned with this same concept of resilience. There is some research into issues of retention that suggests *endurance resilience* (Walker, Gleaves & Grey, 2006) may be a significant contributory factor in understanding why some students remain on program

of study while others choose to leave (Feinstein & Hammond, 2004; Deegan, 1996). This type of resilience is considered a personal construct related to reactions to external circumstances (Kordich Hall & Pearson, 2005). In this sense, the concept of resilience is an attempt to explain why some students are more likely to put difficult life events into perspective, so that when unexpected crises do arise, they have the necessary mental and emotional skills to deal with them more effectively. The determinants of endurance resilience are thought to be complex, probably a combination of maturity, life experience, upbringing and personality. Certainly, there is some agreement that life experience is significant as it provides a greater probability that students will have experienced adversity before and have accumulated some *identity capital* to draw upon (Cote, 2002; Hammond, 2004).

O. Change in Circumstances

The 'Change in Circumstances' sub-scale was calculated by an incremental method, each time one of these responses was different to the previous questionnaire one (1) was added to the student's initial score of zero (0). This gave a range of possible values of 0-16. However, the highest score of any student was only 3. According to the empirical results in this study, an unsettled environment with major changes to housing, job or family circumstances seemed to have only a slightly harmful effect on students' capacities to persist in their studies. Those students with fewer changes to their circumstances and therefore a lower score (persisters had a mean score of .38) were a little more likely to continue in their studies and/or graduate. Students with more changes (non-persisters had a mean score of .42) were slightly less likely to persist. However, 18% of the withdrawing students made comments about accommodation problems at some time during the survey. Changing to full-time work from part-time work almost invariably meant dropping out (8 out of the nine students who mentioned this

withdrew). Interestingly, losing a job or going to reduced hours appeared to have the same negative effect with 11 of the 15 students who mentioned this dropping out. Splitting up with a partner/spouse seemed also to be a significant danger factor, especially for men. All five men who mentioned this dropped out, whereas only 3 of the nine women who stated this did so. A small number of students had a change in circumstances because of their study, i.e. seven students decided to move to a major population centre so they could continue their studies full-time and on-campus.

The ability to cope with change would certainly appear to be a useful trait for students wanting to persist. The term *adaptability* resilience in relation to students' ability to adapt to changed circumstances has been coined by Walker, Gleaves and Grey (2006). The notion of adaptability being a requirement for academic integration and successful progress is consistent with both Tinto's (1975) theoretical propositions regarding the students ability to adapt and integrate with college norms, and practical research such as that by Krotseng (1992) who found that adaptability of students correlated (but did not go very far in explaining) persistence among college students. Walker, Gleaves and Grey (2006) have more recently argued that in modern academic programs that are significantly modularised, adaptability resilience is actually more important and contributory to success in learning than *endurance resilience*.

III. A POSSIBLE ALTERNATIVE MODEL

This section posits an alternative model of student progress based on the results of this study. This alternative model was derived from performing an exploratory factor analysis of the collected data (103 items) for the quantitative test of the model originally developed for the study. The qualitative data were used to suggest possible relationships amongst the

clusters/factors resulting from the factor analysis. The sample was first tested as adequate for factor analysis. Both the Kaiser-Myer-Olkin measure of sampling adequacy (.891) and Bartlett's test of sphericity ($p < .001$) for the sample indicated that this was the case. For the factor analysis, principal axis factoring was used as this is the method more often used for theoretical explorations of the underlying factor structure (Meyers, Gamst & Guarino, 2006). Two types of factor rotation were used, orthogonal and oblique, but there were no appreciable differences in the results using either approach. Using Kaiser's criterion (eigenvalues < 1) seven factors were determined. Table 6.3 shows the eigenvalue of each factor and the percentage of variance explained.

Table 6.3. Factor Analysis

Factor	1	2	3	4	5	6	7
Eigenvalue	3.931	1.467	1.314	1.246	1.210	1.058	1.01
% of variance explained	30.25	11.29	10.11	9.58	9.31	8.14	7.63
Cumulative %	30.25	41.54	51.65	61.63	70.54	78.68	86.31

Description of the Alternative Model

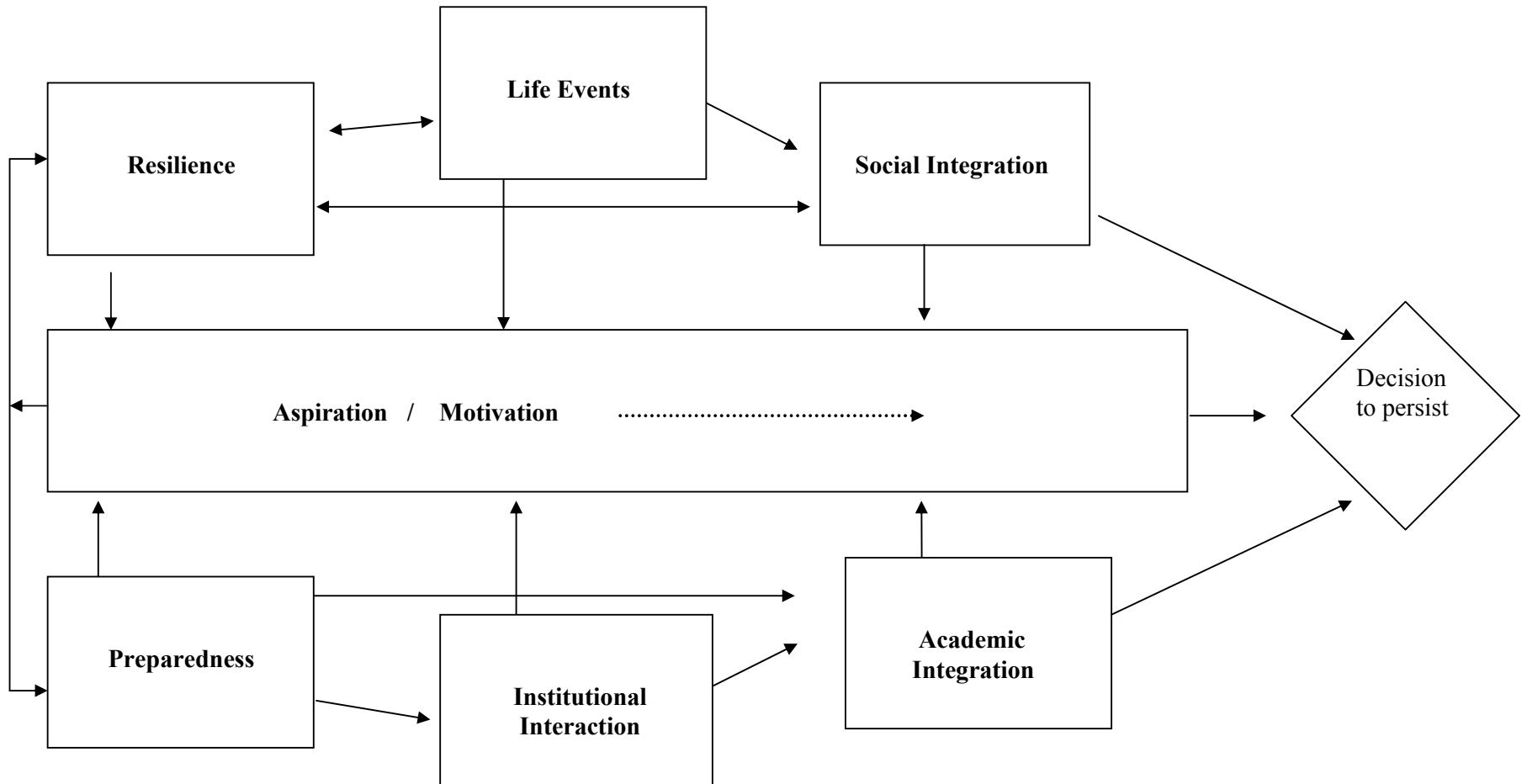
The clustering of items comprising the factors showed a significant deviation from the factor structure of the original model. The cluster of items comprising Factor 1, the most significant factor, was mostly a combination of items from the original model's subscales of *goal commitment* and *motivation*. For the purposes of depicting the alternative model (Figure 6.1), this factor is labelled as 'aspiration/motivation'. In the factor analysis, Factor 2 was comprised of a mix of items from *prior education*, *computer experience*, and *preparatory course*, a rather broad conception that has been termed 'preparedness'. The third factor comprised a small number of items related to resilience or coping strategies, so in this alternative model, this has been termed 'resilience'. These items were from the original scales of *Entry*

Characteristics, Academic Integration and *Extraneous and Adventitious Events*. The fourth factor consisted primarily of the items that comprised the subscale of *institutional interaction* in the original model; so the label for this factor has been retained as 'Institutional Interaction'. The fifth factor in the alternative model comprised most of the items in the original scale *Academic Integration* with the exception of the *institutional interaction* subscale items. This factor has been labelled 'Academic Integration'. In effect, this disaggregates the items relating to students' perceptions of their own traits and abilities relating to academic performance from their perceptions of the actions of the institution— giving two separate factors 'Institutional Interaction' and 'Academic Integration'.

Factor 6 was made up of items that had mostly comprised the *Extraneous and Adventitious Events* scale and some *Social Integration* scale items that related to family and work changes. This factor has been labelled 'life events'. The remaining items from the social integration scale comprised the seventh factor. The label 'social integration' has been retained for this new factor. These last two factors then, combine the original factors *Extraneous and Adventitious Events* and *Social Integration* and then disaggregate the constituent items into two new groupings, the first of which encompasses items related to student perceptions of the external forces acting on their ability to balance their lives and study (now labelled 'Life Events') and the second contains items relating to internal or personal traits and factors that do the same, which is labelled 'Social Integration'.

The factor analysis, as with the results of the qualitative study, reveal that the original subscales of *goal commitment* and *motivation* are very closely connected. So the single factor, described as 'Aspiration/Motivation' is at the core of the alternative model. As has been shown in the qualitative study,

Figure 6.1. An Alternative Model of Student Progress.



when students begin they are motivated by certain aims and goals (and usually with an intention to complete). These aspirations are the starting point for their ongoing motivation. As the students progress through their program, this motivation waxes and wanes as they are impacted external factors, such institutional interaction and life events. How they progress and how they cope with these external factors is tempered and influenced by their own resilience, academic and social integration. Having a requisite level of motivation and staying motivated appears to be the most important aspect of persistence. In this respect, the alternative model, with its emphasis on motivation, is an improvement over the original model developed for the study.

IV. THE EX POST-FACTO (REFLECTIVE) STUDY

This section is an analysis of the ex post-facto survey (undertaken as part of this broader study in persistence) and a comparison of the results of this survey with a previous ex post-facto survey undertaken at the same institution some twenty years previously (Osborne, Kirkpatrick and Kember, 1987). The principal purpose of both the contemporary and previous surveys was to determine the main reasons or factors that withdrawn or discontinuing students believed were behind their departure from study. The reasons given were divided into three categories: *external, time and circumstance related factors*, *personal factors* and *university related factors*. It is under these sub-headings that the results are discussed.

External, Time and Circumstance Related Factors

In both studies external and time related reasons were the main ones given for withdrawal by students. In the 1980s study time pressures or unexpected changes in work or family circumstances were cited by approximately half of the students (54%). The open-ended questions in the 1980s survey also

contained numerous related responses. In the 1980s study, the researchers warned that full credence should not necessarily be given to these statements because of the assertions of attribution theory (Weiner, 1985) meaning that generally, people take credit for their own success by explaining these successes as due to their own personal endeavours. On the other hand failures are invariably attributed to external factors beyond their control.

In the contemporary study, 56% of all students cited pressure of work, family or other external constraints as their main reason for withdrawal. However, the idea, as propounded in the findings in the 1980s, that attribution theory accounted largely for the significant proportion of students citing external factors, needs to be revisited in light of the second study. This is because the contemporary study also questioned the continuing and completing students about their experiences. A similar proportion of these students also cited work and family commitments as being very difficult to balance when studying. Some of these students described external occurrences that could only be characterised as dire, yet they still kept studying. So it might not be that unsuccessful students look for excuses to cover up their own failure (and family and work are the most convenient targets), but rather most students have very real issues with balancing family, work and study, but some just cope better – they are either more resilient or receive vital support from other quarters such as spouses or lecturers.

Since the 1980s study, there has been a minor increase in students citing other changes or personal constraints such as financial or housing problems. A possible explanation for the increase evident from the research was that the sample of the contemporary study contained a high proportion of un-partnered women with children (27%), who also tended to make up the

lowest income group. Unfortunately such demographics were not recorded in the 1980s study, so a substantiated link cannot be made. Also, in the contemporary study, lack of access or difficulties in accessing a computer was also a reason occasionally cited. In the 1980s study this was not such an issue as only one unit – Computing – required access to a computer, and even for this unit the university did not expect students to have their own computer. The 1980s study did not have a specific question on computer access, although, a few students mentioned that getting access to a computer in a computer centre for the required six hours was difficult.

Personal Factors

Both studies included questions related to students' perceptions of the study skills necessary for the successful completion of an external course. The issue is a significant one because a high proportion of external students are mature entrants who either lack the normal entry qualifications or completed their schooling several years prior to commencing study. In the 1980s study, 11% of students had attended a study skills course before the semester, and a further 30% said such a course would have been useful. Fifty-seven percent said they found it difficult to organise their study time to fit in with the requirements of the unit. Thirty-nine percent had to devote more than the advised 10-12 hours per week to a unit. In the recent contemporary study, 29% of students had undertaken a preparatory course of some sort. Almost all said that the course had been of value (even though they later withdrew from their award course). An interesting finding was that those who completed a preparatory course were much less likely to give a reason blaming the university for their withdrawal. Perhaps these students had the perception that the university had provided adequate assistance, and their failure to complete must be attributable to some other factor. Conversely, the group who had not

completed a preparatory course were much more likely to give several reasons, including one blaming the university and some other factors such as lack of time. Table 6.3 below gives the percentages of students in the two groups. This shows there was a definite difference in the reasons given by students completing a preparatory course compared to those who did not. Only 5% of the students taking a preparatory course gave reasons implying the university caused their withdrawal. This compares to 22% for those who did not do a preparatory course.

Table 6.3. Percentages of responses by category for sub-sets of students depending on preparatory course completion¹.

	University	Personal	External
Prep Course ²	5%	41%	54%
No Prep Course ³	22%	30%	48%

¹. Reasons categorised as in Table 5.43 above (NB many students gave more than one response).

². Percentages of reasons given by students who attended a preparatory course given by the University using the categories in Table 5.43.

³. Percentages of reasons given by students who did not attend a preparatory course using the categories in Table 5.43.

In the contemporary study 15% of students thought they lacked the computer skills required to be successful in the course when they started, and 4% cited lack of computer skills as the major reason they withdrew. In the open ended questions on the questionnaires in the contemporary study it was clear that the level of computer skills required was a surprise to many, especially mature age students. In the 1980s study computer skills were not an issue as all units except 'Computing' did not require the use of a computer.

In the 1980s study, comments in the open-ended questions suggesting students who started study late, either because of late enrolment or

unavailable textbooks, had difficulty catching up. While only a small number (2%) gave late enrolment as the primary reason for withdrawal, 11% of respondents said they had enrolled late and found it difficult to catch up. In the contemporary study late enrolment was not really an issue because the enrolment process is now comparatively rigid and standardised, and late enrolments are usually discouraged or penalised. However in the open questions a very small number (3) students did note that they had to start their study late for personal reasons and this meant they found it difficult to catch up. This concurs with a number of studies showing that students who enrol/register late are more likely to withdraw (Street, 2000; Smith, Street & Olivarez, 2002; Mandernach, Donnelly & Dailey-Hebert 2006).

A small number of students in both studies said they had made the wrong choice in their selection of study. However, in the contemporary study the percentage was double that of the 1980s study. Examining the responses to related questions did not shed any light on why this is the case. It could be supposed that more choices mean a greater likelihood of getting it wrong, or perhaps the university is taking students' background knowledge of newer disciplines too much for granted. Perhaps related to this difference is the change in the number of students citing a lack of motivation from the 1980s study to the contemporary study. In the 1980s study this reason was one of the least cited, yet in the contemporary the number of students saying they were not motivated enough to finish the course more than tripled (up from 2% to 7%). Curiously, from the content of the open ended questions many students seemed to feel that it fell to the university to ensure they remained motivated.

University Related Factors

In the 1980s study students did not generally view the quality of course materials as an area of high concern, and many gave positive comments about the quality of course materials. At the time all external units had materials compiled with the assistance of the external studies unit. However, it was noted that over 20% of students claimed the course materials assumed knowledge they did not have. In the contemporary study students seemed generally happy about online course materials and were very happy with materials in the small number of units still coordinated by the external studies unit. There were some concerns regarding reading material online – particularly eReserve texts, with many saying the files were too large to download over their dial-up internet connection, and some even found that WebCT could cause problems with comments such as: *‘I found that due to my location it was frustrating – graphics take forever to download and time is far too precious for that’* not being uncommon.

In the 1980s study, 26% of responses said essential textbooks were not available at the start of semester, but the vast majority (91%) of students found the textbooks were useful and suitable for the unit when they were available. Around 22% of students in the contemporary study made adverse comments about the availability of textbooks. Many students in the contemporary study expected not to have to buy textbooks as the university should provide enough copies on reserve in the Library. This perhaps reflects the rampant inflation in the price of textbooks over the last 18 years as much as an attitudinal change. Many students in the contemporary study also lamented the inability to have bookings on library materials in advance as they wanted to be certain that materials would be available when they travelled to the university. However, remote students were in general happy with the Library’s service with many (89%) saying that the Library provided

an adequate service, and some (15%) volunteered praise of the Library's service. Interestingly, students who could not visit a campus at all were the most complimentary towards the Library's service.

In the 1980s study a considerable percentage (31%) of students was annoyed by late and incorrect mailings, although only 6% said administrative problems such as late mailings were the primary reason for withdrawal. In the contemporary study, late mailing was not a significant issue, with only 1% citing this as a problem. The percentage of students (3%) who did give administrative problems as their main reason for withdrawal, gave either examples of unit availability or financial dealings with the university as problems. In the contemporary study, 83% of students had positive comments about administrative staff or procedures. No doubt the small amount of material now being mailed is the main reason for the decline in the numbers of students citing this area as problematic.

In the 1980s study, while only a relatively small number (9%) cited poor quality of teaching support as their primary reason for withdrawal, many of the other responses indicated that there was some unhappiness with the level of teaching support at the university, with many (80%) withdrawing students expressing the desire for more study schools or other face-to-face contact. Although a similarly large proportion (70%) found tutorials useful. In the contemporary study, lack of opportunities for contact with staff was not such a significant issue (although lack of opportunities for contact with other students was often mentioned). A small number of students named individual lecturers who were difficult to contact or from whom they could not get an email reply.

In the 1980s, students when asked about feedback in general, expressed a low level of satisfaction. This was reinforced by the number of students suggesting an improvement in feedback support from teaching staff and markers, and by the fact that over a quarter of students expressed disquiet at the speed of assignment return. In the recent study just under 22% of students said they thought assignments were returned too late. From the comments made by students in the open ended questions in the contemporary study, it seems that assignment feedback is a major factor in their interaction with the university and a lack of feedback makes some consider if it is worth embarking on their second assignment if they have no idea how they did on their first. Also, simply having tutor's comments on pieces of written work as the only real interaction in a critical sense was thought to be inadequate. Students appeared to yearn for opportunities to explore the criticism, and were generally dissatisfied with the static and asynchronous nature of comments. From a pedagogical perspective, interaction restricted to comments prevents learners from being helped to unpick assumptions and misconceptions within their ideas. Gallie and Joubert (2004) suggest providing feedback in a more open, engaged and dialogic manner as something to which teachers in online education should aspire. Of course, good feedback on assessments is not a principle restricted to distance education. The possibilities of using feedback and commentary on assessment tasks to enhance student learning have been comprehensively covered by Gibbs and Simpson (2002), Rust (2002), Rust, Price and O'Donnovan (2003), and Nichol (2007).

V. IMPLICATIONS OF THE RESULTS OF THE STUDY

One the most important factors predicting success in the model is academic integration. This is also the factor over which the institution has the greatest control and influence. A component of academic integration is institutional

interaction and this was the area of greatest concern by students. The implication is that there is considerably more that institutions can do to improve retention of remote students through ensuring students experience the best interaction with institutions as possible. It would seem then that, there are some opportunities for Universities to implement policies and procedures that help maintain students' motivation, and even to assist in social integration (although this is a more difficult proposition). None of these ideas is new and there is considerable existing literature regarding andragogical research that suggests strategies for better engaging students, preventing attrition, and teaching effectively online — particularly in relation to first year students (Morgan & Thorpe, 1993; Krause et al., 2005; McInnes, James & Hartley, 2000, Oblinger & Oblinger, 2005, Brown & Adam, 2009). The results from this study reinforce the research that encourages the promotion of academic integration through;

- Informative, direct and truthful promotional and preliminary materials
- Early identification of vulnerable students
- Provision of preparatory and induction courses/sessions
- Early integrative contact and the promotion of social integration
- Consistency and clarity in policies, procedures, rules and requirements
- Motivational contact at the course/unit level
- Structuring of programs and units for retention
- Quality course content and the encouragement of deep learning methods.

Informative Promotional Materials

In the retrospective study 6% of students who dropped out thought they had 'chosen the wrong field of study'. This was double the percentage in the 1987 study. While this is still a minor proportion of students, many others mentioned that there was a gulf between what they thought university would

be like and how it turned out to be. Also, 13% gave a lack of computer or study skills as a reason for dropping out and 9% said the workload was too much, so it is clear that many students entering university are unclear about the requirements and demands of higher education level study. A study by McLinden (2002) found that informative, direct and truthful promotional and preliminary materials assisted in reducing attrition from units and programs, and that this was increasingly important as the greater range of courses now offered and the more arcane subject areas available makes it more difficult for students to make a choice.

Detailed unit and program information needs to be given before students decide on their units as a decision can be very hard to shift once it has been made. Further information given after the decision tends to be assimilated into the student's thinking and reinforces the decision (Simpson, 2003, p40). While most university unit and program descriptions tend to be accurate in that they comprehensively list the topics, they can be quite ineffective at communicating the level of the study required and the expected outcomes.

Some universities that concentrate on distance education have student advisors to help students select a program/units by phone (Monash University for example²⁴). This is an expensive process and Johnson (2000) found that personal advice was comparatively ineffective in persuading students to change to a more appropriate program or course. However, universities should certainly be willing and able to answer enrolling distance students' queries by phone by appropriate personnel. Many students in this study lamented the difficulty in getting advice before the start of semester when many academic staff were absent.

Early Identification of Vulnerable Students

Early identification of vulnerable students is important. From this study it was clear that vulnerable students, especially those who did complete a preparatory course were likely to withdraw in the first semester. The two principal possible methods of identifying vulnerable students in universities with reasonably open admission policies are assessment of prior education/student profile and self-diagnostic tests (Simpson, 2006).

It is conclusive that from this study and others that educational background is a very limited measure, especially for mature age students with some time since leaving school/previous study. Self selection for preparatory courses or remedial courses is effective to some extent – many students who have been away from study have grave misgivings about their abilities and volunteer for any assistance provided, but the numbers that drop because it is too hard indicates that this is not entirely successful. Perhaps some more empirical method, such as self-diagnostic tests, needs to be considered. The Open University (UK) has experimented with these with some success, depending to some extent on subject area (Lewis, 1999). The advantage is they are cheap (compared to an externally assessed test) and tend to be seen as less threatening by students.

Provision of Preparatory/Induction Courses

This study showed that vulnerable students who undertook a preparatory course had very similar retention rates as non-vulnerable students. The preparatory courses were offered only in on-campus mode, usually just before the start of semester for the students in this study. Of course, for many students who have chosen to study externally, attending such a course on campus might well be impossible. The Open University (UK) has for some

²⁴ <http://monash.edu/offcampus/support.html>

time been offering preparatory courses called 'Openings' which consist of packages of written and audio-visual material supported by phone and email contact designed as an introduction to distance learning in the student's intended field. A study by Sutton (2001) indicated that these preparatory courses had a clear retention effect (88% of students who completed Openings were still registered one third the way through their degree program). While universities may baulk at the cost of providing preparatory courses to distance students they could potentially pay for themselves. The institution could charge a small fee to recoup costs; and, so as to not put an extra hurdle in front of vulnerable students, perhaps also grant a small amount of academic credit on completion. The University of Tasmania is already offering the chance for dedicated students in senior secondary colleges to gain academic credit by taking university level courses in their own schools and the university also offers taster courses through the Adult Education system (though generally not for credit). Some re-jigging of these courses could perhaps give potential distance education students the chance to do some preparatory work in their local area. In the section above the concept of 'self-diagnostic' tests was discussed. Students identified as vulnerable through this process could perhaps be recommended for one of these preparatory or taster courses. Also, it should be mentioned that after the completion of this study, the University of Tasmania began offering free preparatory courses online as part of the 'UniStart' program²⁵.

Early Integrative Contact and Strategies for Assisting Social Integration

Because of the acknowledged attrition as a problem in universities most now have an induction process where students are given tours of the campus, library and administration and given the opportunity of a question and

²⁵ <http://www.utas.edu.au/unistart/>

answer session. In the distance context induction presents some problems for the university. From this study it was clear that a detachment from the institution and fear of the unknown were two common themes in the students' responses.

The Open University (UK) has experimented with a solution to this problem (Peoples, 2002). Peoples ran a project where 800 students were contacted by tutors before they started their course (and a control group were not). The calls were informal and largely unscripted. Students were encouraged to ask questions and their understanding of a number of important factors was checked. A review about halfway through the degree program revealed a 4.5% higher retention rate in the group that was contacted. Peoples also found that the process was cost effective as the improvement of 4.5% (36 students) saved around £10,800 whereas the total cost of the calls was only around £4000.

Of course, university induction can also be web based (although the effectiveness of this could be questionable if large numbers of students had little web experience). While several universities use web based induction at the subject/unit level, there does not appear to be many using such methods for a general initial induction. Unfortunately, it would seem no-one has yet undertaken any systematic studies comparing and contrasting the effectiveness of these various approaches in higher education—although corporate web based induction programs have been researched to some degree (Dodds & Verest, 2002).

This study also revealed the importance of family and friends, and to a lesser extent employers, in the success of distance students. Apart from sometimes providing information aimed at the parents of students in traditional

universities, very little attention is paid to family and friends, or employers by universities. While most of these interactions are beyond the scope or control of the university it is not difficult to conceive of some simple and inexpensive initiatives that would be worth trying on the part of universities. For example, a brochure either in hard copy or online aimed at the families or friends of students would be relatively easy to produce and could contain material such as; what they can expect the student to be required to do by the university, the amount of time they will be required to study each week, the need for a quiet place to study, and give some simple suggestions about how they could give some support—from simple encouragement to the proof reading of assignments.

It goes without saying that materials aimed at students should contain information about the importance of family and friends, and should urge students to involve their spouse/partner in the decision about beginning study and to negotiate with family and friends about social activities so that they can fit the activities around their study schedule.

Consistency and Clarity in Courses, Policies, Procedures, and Requirements

One of the common complaints of students during this study was the lack of consistency between units both between schools and within schools. While they wanted the content to be varied, they preferred the structure and format to be similar. Because the major contact with university for these students is the actual coursework, distance students feel confused and resent the higher learning curve students experience at the beginning of each course if the next unit departs too much from previous units. Also, from the institution's perspective, a consistent approach makes it easier to provide necessary support. In addition, university staff who fully understand the contexts of their units, the program sequences, policies and procedures, are better

prepared to design units that fit with institutional and programmatic standards and expectations. Unfortunately, such efforts at continuity are being undermined by the increasing casualisation of the university workforce (Percy, 2008).

During the study a proportion of students bemoaned the small number of units available completely off-campus. Their main problem was not just lack of choice, but the difficulty of fulfilling their program requirements. They often said they were bemused by why units in different programs, though available through the same school at the same level, could not be used for credit towards the program in which they were enrolled. Since the completion of the study for this thesis, the university has undertaken to introduce a consistent framework of courses and awards across the university and to review and rationalise course offerings in each faculty to meet university plans and targets for student enrolment, a move which may ameliorate some of the concerns raised by students.²⁶

Motivational Contact at the Course/Unit Level

A common problem cited by the students in the study was the feeling of isolation and the difficulty in staying connected and motivated. While this can be seen as a fundamental problem inherent in the nature of distance education, there could be some strategies to alleviate it. Certainly, many universities have assumed that the advent of online communications have gone a long way to solve the problem, but an analysis of the results of this study indicate it is still a major issue.

There has been some work done in this area in recent years. Case and Elliot (1997) reported on an intervention at an Arizona college where between two

and five telephone calls were made to targeted students at strategic times throughout the semester – just after the start of semester, before the first assignment and before the mid-term exam— with the aim of building a rapport, encouraging good time management and to encourage contact with tutors. Case and Elliot found that the students receiving the calls were 15-20 per cent more likely to complete the course. In 1998, Visser developed her 'Motivational Messages Support System' which has a series of short motivational messages to students timed to arrive at critical moments and whose texts were designed to grab attention, be relevant, inspire confidence and promote a sense of satisfaction. While tested in only a small study of 130 students, she appeared to demonstrate a retention effect with students in courses with the messages having a retention rate of 61% compared to the average of other courses at her institution only being 34%.

Simpson (2003) suggests that from experience at the Open University short informal messages that address students concerns directly and seek to give appropriate encouragement should be sent at the start of the course, when students first log on to the web delivery system, before the first assignment, after the first assignment, before and after subsequent assignments, before any residential school and pre-exam. Simpson recommends the use of a variety of contact media – mail, email, phone and text messaging depending on the type and content of the message. Simpson's suggestions, are to some extent, backed up by research done at the Open University (UK) by Gibbs and Simpson (2003) that analysed the submission rates of assignments of nearly 2000 students split evenly into two groups. Members of one group were contacted by their tutor before their assignment was due, the members of the other group were not. The contacted group had a statistically significant

²⁶ <http://www.coursestructures.utas.edu.au/>

increase in assignment submission – although there was a question as to the cost/benefit ratio of the exercise.

A more recent study by Gallie (2005) indicated from a survey after the trial of a system to enhance retention, that the majority of respondents (95%) said that periodic e-mails and the discussion board messages helped to keep them focused on completing the course. Subsequent feedback from more experienced distance education students identified online student-lecturer and student-student discussions and prompt feedback and postings to be important in keeping them motivated and satisfied in the course.

This study also revealed that many students were reluctant to contact academic staff because they felt their contact would not be welcomed or they were concerned that their queries might be considered foolish. Gallie and Joubert (2004) found that setting up a system where students were required to contact the instructors at set times and encouraged to contact at other times as they needed to do so, had a favourable impact both on students perception of the course and on retention. Gallie and Joubert found that a forum board encouraging students in similar geographical locations to form their own study groups and meet at self-determined locations, was on the whole successful and had a positive impact on student sentiment.

Structuring Programs and Units for Retention

Distance students are almost invariably part-timers so, if commencing a bachelor's degree, the completion date is at least six years in the future—no doubt a daunting prospect for most students. This has been recognised at many institutions and now diplomas and associate degrees are often available as exit points or programs in their own right. Some Australian research (Guthrie & Loveder, 1990) has indicated that multiple exit points and

articulation between levels can assist in retention, perhaps because it builds something of a psychological ladder of achievement.

Many distance students are in situations where they are unable to study continuously, sometimes needing to take breaks from their studies for a number of years. A number of exit points means they can 'bank' the academic credit they've accrued. It is not inconceivable too, that properly structured, even a single year of university could be beneficial to the student both as a quantum of knowledge and as a method of grooming the student for return to university at a later date. By allowing the student to leave without sense of failure after a year, there is perhaps more likelihood that they are willing to return to complete a full degree. From the perspective of the university, students graduating with a certificate after one year, and an associate degree after two, at least on paper, can be recorded as completions rather than attrition.

The ability to use units already passed for one program for credit towards another is another way universities can assist students. The more flexible and modular the programs, the less penalised are students who make an inappropriate or mistaken initial choices of program. Needless to say, offering sufficient units by distance to satisfy the full program in which a student is enrolled (or at least the opportunity to take units from other institutions at a distance for full credit) seems to be greatly appreciated by students from the results of this study. Also, many students suggested that the university remove unnecessary obstacles to program completion – such as minimum progression within timeframes that do not take account of the longer average program completion time of part-time/distance students. Progression rules regarding pre-requisites and co-requisites which are only achievable by students who choose to progress in a set pattern, semester after

semester, were also an issue for many of the students in the study.

With regard to the structure of units and length of units, some students in the study noted that they sometimes felt lost in the amount of material they were initially presented with and did not know where to start. Pomales, Garcia and Liu (2006) found that a shorter unit length (such as by semester or quarter) was better than year long units and modularised units were preferable. They concluded that the course notes for each module/topic within a unit should take between 7 minutes to 20 minutes to read. They also found that modules containing video were viewed more positively by students and kept student attention longer than text only material. Gallie and Joubert (2004) also found that a variety of formats aided in both student satisfaction and retention. The comments of students in this study appear to indicate that students believe the structure of some units to be more conducive than others, and also appear to back up the literature that advises structure and regular check-in points and coursework deadlines to ensure their success (Quinsee & Hurst, 2005). The results of this study also appear to back up well accepted principles of course design, such as the need to set a minor assessment piece early on (especially in first year subjects), the staging of material, and regular minor required exercises to force students to regularly log in and read materials.

Course Content

In the post hoc study, 9% of students who withdrew gave course difficulty as a reason for withdrawal. The responses and comments of students—particularly first year students—during this study indicated that they had difficulty with the readability or structure of course materials. It was not so much that the concepts were too difficult to understand, but rather that they found the use of jargon and unnecessarily convoluted language an obstacle to understanding. Simpson (2003b) believed that readability of course notes was

a key factor in retention of students at the unit level. While not advocating ‘dumbing down’ content, it was suggested that complex sentences with obscure terms and flowery adjectives should be avoided and the essential concepts should be in plain language. These concepts can later be embellished and enriched from the required and recommended reading.

The results of this study were consistent with previous work and theory on the effectiveness of deep learning strategies on behalf of students as a substantial prerequisite for success. There is also some recent research on the possibilities of designing course material to encourage, foster and necessitate deep learning. Brown (2004) suggested the frequent inclusion of “thought questions” designed to encourage course participants to think about, integrate and synthesise the course content. In addition, Brown advocated giving students tasks which require them to interacting critically with the content, relate new ideas to previous knowledge and experience, relate evidence to conclusions, examine the logic of an argument, and use organising principles to integrate ideas in order to assist with deep level learning.

The findings in this thesis provide some indirect evidence that increasing the amount of online interaction and the number of opportunities for student activity, discussion and feedback may improve student retention, this is certainly the case if one accepts the argument that satisfied students are more likely to persist. However, it appears that most distance students prefer asynchronous interaction, as requirements for synchronous interaction is seen to negate one of the main reasons most students are studying remotely — they have commitments that keep them in the remote location that need to be flexible and work within their own timeframes. Asynchronous interaction stops them feeling isolated but does not force them to be online at any particular time. While these findings need to be confirmed in other settings,

they lend support for research such as that by Berger & Lyon (2005), who argue that building social interaction into online courses has significant effects on student retention and suggest that social interaction may be the key to discouraging student departure.

Students taking units with online assessment activities often noted this in their comments and these comments were almost always favorable. While many students were ambivalent about collaborative online activities for their own sake, they seemed happy to participate when there was a good reason, such as getting marks or gaining information that helped with an assignment. While it is difficult to say that the inclusion of interactive tasks and assessments directly assists retention, from the students' responses in this study, it certainly seems to help in maintaining motivation. Parashar and Philip (2008) also noted this tendency in their detailed analysis of the online provision of Law courses.

Feedback from students in this study regarding assessment generally appears to indicate a strong preference for exercises on topics that are closely aligned with those of the student. Perhaps because most distance students are immersed in the world of work and rather than university life, they can be critical of assignments that seem too theoretical or esoteric. In units with a high enrolment of distance students, therefore, it might be worth considering giving students the option of choosing their own essay topic, perhaps encouraging them to submit a topic for approval. The recent research pertaining to authentic assessment would appear to provide a source of encouragement and justification for such an approach (Herrington & Herrington, 2006; Fitzsimmons, 2006; Herrington, Reeves & Oliver, 2005; Reeves, 2000).

Most universities are now encouraging or even requiring staff to offer students the opportunity to complete a course survey once they have finished a unit. While the reasoning behind this move is more often to gauge student satisfaction and perhaps staff performance, such surveys are potentially useful tools for increasing retention. Surveys can give insight into student behaviour and can provide feedback on the course design factors essential to retention such as the ease of access and navigation, the interface, and the amount and quality of interaction. Periodic course review helps ensure currency of content, appropriate use of technology, effectiveness of delivery strategies, and integration within the larger curriculum. Updating or redesigning courses as needed should assist indirectly in retention (Volery & Lord, 2000). In the period since the completion of the data gathering phase of the work for this dissertation, the University of Tasmania has embedded periodic course reviews into its official policies and procedures²⁷.

However, most current surveys only capture information from students who have completed the course. Ex post hoc surveys of withdrawn students, such as the one conducted as part of this study, remain a rarity. Regular, systemic efforts to tap into the views of students who withdraw would no doubt be fruitful for institutions. A project conducted by Paisley University whereby past students who had withdrawn were contacted, resulted not only in valuable information about the reasons for their withdrawal being obtained, but several students returned to study after being disabused of the notion that the university would not want them back (Houston, 2002).

²⁷ <http://www.utas.edu.au/tlqam/>

Chapter Seven

CONCLUSION

This last chapter, the conclusion, will summarise the outcomes, findings, and limitations of the research. It also contains some suggestions for further research on factors affecting the success of higher education students studying at a location remote from a traditional university campus, and some discussion of how the results of the study might contribute to some practical suggestions for institutions offering distance education programs.

I. OUTCOME OF THE RESEARCH

A comprehensive literature review was undertaken in the fields of distance education theory, higher education retention and persistence, and factors affecting persistence in distance education and online learning. The main indications and themes that came out of the literature review were that persistence is an ongoing problem in distance education and theories of distance education postulate that for this mode of education to have successful learning outcomes 'transactional distance' must be minimised (Moore & Kearsley, 1996). Furthermore, it was clear that in this type of learning, the extent to which a minimum level of student satisfaction is achieved largely determines a student's willingness to persevere in a process in which it is inherently difficult to maintain motivation. Also, importantly, there was a substantial body of work supporting the notion that students with a particular cluster of characteristics should be identifiable as groups of students who were more or less likely to persist (Sweet, 1986; Sheets 1992).

There was yet another stream of research indicating that the quality and nature of students' interactions with their institution (Anderson, 1982; Berger & Lyon, 2005) and with their families, peers and work environment during the distance education process (Bean & Metzner, 1985; Kember et al., 1994b), can contribute to student attrition rates. Also, it was evident from the literature that there are strategies, policies, and course construction and design principles that can be undertaken by institutions that assist with student retention in general and retention of remote students in particular (Marton & Säljö, 1976; Simpson, 2003b; Brown, 2004; Berger & Lyon, 2005). The literature was also searched for theoretical and conceptual models of persistence/success in distance education. This revealed a number of models. Most of these approached the issue from a particular perspective, concentrating on one of economic, psychological, organisational or sociological facets of the problem (Rekkedal, 1972; Boshier, 1973; MacKinnon Slaney, 1994). Those that were multifaceted tended to concentrate on one of two aspects, being either static, ex-ante models, most of which concentrated on student entry characteristics (Panos & Astin, 1968; Pantages & Creedon, 1978; Pascarella, 1982; Bean, 1982) or conversely, though more rarely, were attempts to dynamically model the process after the students began their studies (Rootman, 1972; Thompson, 1984, Bajtelsmit, 1988; Garland, 1993; Rezabek, 1999). Most of these models were theoretical—they had not been quantitatively tested. One model, that of Kember (1995), was multi-faceted and included both student entry characteristics and process related aspects. Kember had also conducted a quantitative test of his model at a number of Hong Kong institutions.

For this study, a new model of distance education progress was developed by critically analysing the current models and reviewing the origins of these models. Common elements of the models were identified and the

applicability of each element in relation to recent relevant research was assessed. In the end a new hybrid model consisting of elements from the models that emphasised the inherent characteristics of students and also some elements from those that highlighted the learning process was constructed.

The components of this model were:

- Entry Characteristics
 - A. Educational Background*
 - B. Computer Experience*
 - C. Preparation*
 - D. Attitude to Distance and Online Learning*
 - E. Self-Efficacy*
 - F. Goal Commitment*
- Social Integration
 - G. Family Support*
 - H. Employer Support*
 - I. Peer Support*
- Academic Integration
 - J. Learning Approach*
 - K. Motivation*
 - L. Institutional Interaction*
- Extraneous and Adventitious Events
 - M. Distractions*
 - N. Unexpected Events*
 - O. Change in Circumstances*

Finally, the new model was very similar to that of Kember (1995) minus some of the elements criticised in recent studies and with components added to take account of the emergence of online learning since its original formulation.

The new model was tested in a longitudinal study at the University of Tasmania. A sample of 210 students, who self selected, were surveyed over a two year period. Their characteristics were established and they were monitored as they progressed. At the end of the survey period the sample was divided into two groups—students who had completed or who were still studying their programs and those who had withdrawn (either officially or

otherwise). The correlations of the factors in the model were then compared with the students' study outcome, that is whether they were in the persisting or withdrawn group. After this comparison, an overall assessment of the predictive capacity of the model was undertaken. These empirical results were also compared to the qualitative comments given by students and were used to enrich and inform the analysis of the results of the empirical study. For the withdrawn, an analysis of the reasons they believed had led to their withdrawal were analysed and the results were compared with those of the earlier study undertaken by Osborne, Kirkpatrick and Kember (1985).

A factor analysis on the data collected to test the model was undertaken. This analysis produced an alternative, and arguably more elegant, conceptual model. This alternative model consisted of seven factors. The most significant of the factors was the concept of aspiration/motivation, this construct in the alternative model was broader than the 'motivation type' subscale used in the original model developed for the study. Aspiration/motivation encompasses the student's original aspirations as well as their ongoing levels of commitment. The other significant difference of the new alternative model to the original was the incorporation of the concept of resilience—that is the ability of the student, either learned or innate, to respond effectively to change and to endure the stresses and setbacks that are inherent in distance education. The alternative model also appeared to be a better fit with the results of the qualitative component of the study, than the original new model developed for the study.

II. SUMMARY OF THE FINDINGS

The research produced significant findings related to five of the six research questions and two findings not directly related to the questions.

Principal Findings Related to the Research Questions

1. What were the general characteristics of the students in the study?

Perhaps the most distinct impression left from the analysis of the survey data was the sheer diversity of students who enrol to study remotely. Furthermore this variety is matched by the diversity of motivations, strategies, learning approaches and variation in ability to cope with the pressures of studying remotely. The educational backgrounds of the students who participated were similarly varied, ranging from students who had only completed Year 10 to university graduates. Perhaps because of the range of qualities required to be a successful distance education student, educational background alone, did not appear to be a particularly good predictor of success.

The students in the study were older than the general student population (the average age of tertiary students in Australia is 24 years²⁸). In the study, the median age grouping was 40–49. Over half the participants were aged over 35 and only 26.6% were under 30. The gender ratio was also different from the general student population (which has a small majority of females)—in the study 78% of students were female. The employment pattern of students also differed, with 29% of the sample employed full-time and a similar number unemployed or retired (31.5%). The largest group was those working part-time (39.5%). Finally, compared to tertiary students generally, a higher percentage of the students in the study were married or were in a defacto relationship (63%), 12% were divorced and a high percentage lived in households with children (43%).

²⁸ Ibid. DEST.

2. Did the factors in the model developed for the study correlate to student persistence, and does the new model have any predictive capability?

Most of the factors within the model showed a correlation to persistence (whether a student withdrew or continued/completed). A test of the model using the SPSS software showed it had substantial predictive value ($R^2=.86$). The two components of the model which contributed most to its predictive capability were *Entry Characteristics* and *Academic Integration*. The attempt in the model to account for *Extraneous and Adventitious Events* was not entirely successful with an R^2 value of only .28. *Social Integration* also lacked predictive capability with an R^2 value of only .27. These figures indicate, however, that the model is useful and improves upon previous models such as Kember's (1995).

The model, while still imperfect, makes some advances in the understanding of the principle factors involved in the retention of distance learning students. The particular strengths of the model appear to be its inclusion of *computer skills* as an entry characteristic and the way the *institutional interaction* subscale was constructed. Both these elements correlated strongly with persistence and had acceptable levels of validity when measured by internal consistency.

In addition, the component of the model *Social Integration* did not produce a significant benefit. This construct encompassed such factors as family support and environment, peer group support and interaction and employer support and work environment. The problem with construct appeared to stem from one of the subscales—employer support. Either the subscale was not adequately constructed, or as would appear from the qualitative results, that employer support was so universally low that an assessment could not be made regarding its correlation with persistence

The problems with the other component *Extraneous and Adventitious Events* which did not contribute significantly to the model probably stemmed also from one of its subscales being flawed. The subscale *unexpected events* consisted of just a simple yes/no one question. The scale therefore calculated simply the number, rather than extent of events, and so did not provide an adequate measure of the factor.

The alternative model, produced after the research was undertaken, potentially provides the basis for developing an improved predictive tool for student persistence as this alternative model meshed better with the qualitative results of the study. Also, appropriate scales could no doubt be developed to test the model's constructs and its overall fit, without undue difficulty, as a body of work in areas such as the resilience and motivation of students, which comprise its major amendments, already exists.

3. What were the principle reasons for withdrawal from the student's perspective?

In this study the principal reasons for withdrawal as cited by the students themselves were: employment demands/changes (23%), family demands/changes (22%), lack of study/computer skills (13%), difficulty/workload of course (9%), lack of motivation (7%) and wrong choice (6%). According to the way the reasons were categorised [based on the previous 1980s study by Osborne, Kilpatrick, & Kember, (1987)] 'Employment demands/changes' and 'Family demands/changes' were both considered 'external/time related factors', and therefore this category of reasons far outweighed the other two categories, that is 'university related factors' and 'personal factors'.

4. To what extent did the reasons given by students for withdrawal diverge from those given by students 20 years ago?

Despite major innovations in instructional technology, the principal reasons for dropout remained the same between the two studies. The main reasons students gave for withdrawal in both the current study and the 1980s study could be categorised as external and time related (this category accounted for 56% and 54% of primary reasons given in the two studies respectively). The two most often cited specific reasons in the 1980s were family demands or changes closely followed by work demands or changes. These were the same most cited reasons in the contemporary study. However, the two other categories of 'personal reasons' and 'university related reasons' had swapped as the second most common category between the two studies. In the 1980s study, university related reasons accounted for 29% of the responses, with the specific reason 'poor quality of support' accounting for 9% alone. Whereas, in the contemporary study, university related reasons had dropped to 18%, the most often cited specific reason being 'difficulty/workload of course' at 9%. In the contemporary study, 'personal reasons' was the second most likely category to be cited accounting for 26% of responses (the most cited specific reason being 'lack of study/computer skills'). In the 1980s study, personal reasons had only accounted for 17%.

It seems, therefore, that fitting in work and family remains the most difficult aspect studying by distance. However, there does seem to be a positive development—students are no longer seeing the actions of the university itself as a significant problematic aspect of distance learning.

5. What are generalisations can be made about the character and experience of students studying by distance education today?

One of the initial aims of the research was to better characterise the contemporary experience of studying as a remote student. It seemed there were too main themes that came out the survey. First, a large proportion of students felt disconnectedness and fought against a tendency towards disengagement from the institution and the study process. Most craved more clarity, understanding and certainty in the university's expectations of them and its policies, procedures and methods. This was not dissimilar to the feelings reported in a similar study conducted at the same institution twenty years previously. In this previous study students said they felt alone and unsupported, and had a perception of receiving sporadic or inadequate communication from lectures and other staff. It is interesting that the advent of the internet has done little to relieve these problems, and a failure to lessen 'transactional distance' (Moore, 1993) continues to hinder teacher-learner interaction.

The other main thread throughout the survey was the preponderance of students with financial concerns. The costs associated with fees and charges, internet connections and computer equipment, postage, and travel to study schools was a recurring theme in the responses. Many of the students worked part-time and were from rural areas with limited employment opportunities. Many students had family obligations. This pre-occupation with monetary issues was not so pronounced in the survey of 20 years ago. Then there were just a few mentions of the cost of postage for returning library books. As there was no higher education charge scheme or tuition fees then, no doubt the service offered by the university seemed a better deal. Perhaps students are now more prone to criticise as they feel they are paying customers and therefore have certain entitlements (Wright & O'Neill, 2002).

6. Are there any differences between the attrition of students studying principally online, versus those doing mainly traditional correspondence (print-based) courses.

Because of the swiftness in the roll-out of online learning at the institutions at which the research took place and because of the inability to separate out students studying either principally online or principally by print based methods, the study produced no useful results with regard to this question.

The extraordinarily quick uptake of an online learning management system and the sudden hybridisation of the distance modes during the study effectively overtook the methodology. Even with a methodology more specifically designed for the task, it seems that the time has already passed where a successful real-world empirical study could be undertaken. The only alternative now, would appear to be to monitor attrition rates and compare them with studies undertaken prior to the uptake of online learning and endeavour to estimate the extent to which any change can be attributed to the new delivery mechanisms. It is apparent that the institution where this research was undertaken quickly adopted an online learning system based on suppositions of efficiency, convenience and expectation rather than pedagogical or retention considerations, and this in turn begs the question—how many other institutions have done likewise?

What was apparent from the results of the study was that students generally like online course provision. It appears to make them feel a little more in touch and gives them easier access to materials. This very fact alone may make it a positive development with regard to retention. This is in contrast to studies showing on-campus students can be ambivalent, sceptical or even negative about the value of online learning (Herbert 2006; Smart & Cappel, 2006).

Findings Not Directly Related to the Research Questions

An unexpected but interesting finding from the research related to the provision of preparatory (or general bridging) courses. In this study, students who had taken a preparatory course, achieved a retention rate only very slightly more than those students who had not (despite the assumption that students taking the preparatory course were probably in a higher risk category than those who had not). However, what was plain from the research was that those who had taken the preparatory course and dropped out were significantly less likely to put the responsibility on the institution as the one at fault. These students were more likely to say that it was a personal factor related to their own skills, circumstances or motivation (i.e. 'internal attribution'). However, students who had not taken a preparatory course and dropped out were significantly more likely to blame the institution in some way rather than themselves (i.e. 'external attribution'). The reason for this was not really discernable from the data collected. It could only be surmised that the preparatory course perhaps gave students a more realistic picture of university study and their own skills. Perhaps, there was a feeling that the institution had to some extent discharged its responsibility to them by providing the preparatory course. Certainly student satisfaction with these courses was high, students appreciating the interaction with staff dedicated to releasing a student's potential in a non-threatening, student-centred environment.

Another unexpected finding was that the commonly constructed role of motivation type is perhaps incorrect. For this study, a scale for motivation type was constructed with values at one end indicating a tendency towards being intrinsic motivation to study (for interest and enjoyment) and one towards being extrinsically motivated (for the reward or gain rather than the

action itself) at the other end. The theory being that intrinsically motivated students should be more likely to persist. However, the results showed that students at either end of the scale were more likely to persist than those in the middle. One must conclude therefore, that it is likely to be the intensity of the motivation, whether intrinsic or extrinsic (if such a differentiation really exists) that is the important factor, rather than the type of motivation. Such a finding is not inconsistent with other recent work on motivation and distance education students, for example: Oxford (1993), Chan (1999), Ergul (2004) and Yukselturk and Bulut (2007).

Perhaps the most fundamental finding of the research was that a useful model seems possible despite the complexity of the area. The approaches of theorists and researchers such as Tinto (1975, 1982, 1985, 2005) and Kember (1989, 1990, 1994a, 1994b, 1995) appear to have merit. The further development of existing models to derive a new integrated model has demonstrated improved predictive capability, and one could therefore conclude, is a more accurate depiction of the attrition process in the distance education of adults. The successful incorporation of additional elements, and positive results achieved through testing over a longer time period indicates we do not need to ‘throw the baby out with the bathwater’, when it comes to re-thinking the tenets of distance education for the online era.

The development of the alternative model, derived after the data gathering phase of this study, indicated that there was potential to further refine and develop a model of student progress in distance education. The derivation of the alternative model gives some direction to future researchers for furthering the understanding of the attrition in distance education by providing a conceptual tool and a framework of constructs with which to work.

Limitations of the Research

The approaches and methodology used in this study were chosen to address some accepted deficiencies in the corpus of research on the topic. For example, the study was longitudinal as it was apparent from the literature review that there was a shortage of studies conducted over the course of time. It used a survey rather than case studies as this was also a common suggestion, and for a triangulated approach, utilising both quantitative and qualitative data. It was also a panel study (longitudinal cohort study) where the *same* students were surveyed several times over the survey period. Nevertheless, there were a number of limitations in the research. Firstly, it was conducted at only one institution. Secondly, by using a different methodology to many of the previous studies it is difficult to make direct comparisons with some of the previous research; and third the subjects (the students) self-selected — that is they were not a random sample they chose to be part of the survey; and fourth, one of the initial aims, a comparison of attrition in traditional correspondence course versus online course was unachievable.

Because, the research was conducted at only one institution, the generalisability of the results will depend on similar research being undertaken at other institutions. To fully test the generalisability of the results a more streamlined study over a number of institutions might be useful, particularly across institutions with different characteristics. For example, the University of Tasmania is a virtual monopoly in its catchment area and operates a quasi open entry policy²⁹. The results in other regions where there are competing institutions with more competitive entry requirements might yield quite different results.

²⁹ <http://www.studentcentre.utas.edu.au/admissions/requirements.html>

As regards to making comparisons with other research already undertaken at other institutions, particularly with regard to tests of conceptual models of attrition in distance education, it would be hard to be declarative. Certainly, the model has a seemingly good predictive capability—and in simple numerical terms the results are encouraging. But it would be difficult to say if it is definitely a better model than previous ones, as none of the others were tested using a longitudinal study of more than a year, as was done with this one. An accurate comparison of the previous models and this one would require a similar longitudinal testing regime to be undertaken for the previous ones as well.

The sample of students for this study numbered 210. Two hundred and thirty-seven (237) students replied to the initial mail-out stating that they would be willing to participate in the study, but 17 students either requested to be excluded or did not return all the questionnaires. Due to the rules regarding research at the institution where the study took place, the generally accepted contemporary norms for educational research and Australian privacy legislation, it was not possible to survey the whole population or analyse any of their institutionally collected data. Neither was it possible to compare the outcomes of the self-selecting group with those who opted out. It could be stated that the sample therefore all shared an initial characteristic—they were sufficiently engaged to participate in the study. The extent to which this might have skewed the results is open to question. However, in defence of the methodology, it can also be indicated that the sample was reasonably large, the sample was a good proportion of the total population of remote students (around 50%) at the institution, and the attrition rate for the sample approximated that of the national statistics for distance education students as a whole.

III. SUGGESTIONS FOR FURTHER RESEARCH

While it is often necessary and practical in educational research to conduct studies at one institution alone, one has to treat the results of single-centre studies with some caution. Therefore, it is almost goes without saying that one of the most useful follow up activities for this study would be for similar research to be undertaken at another institution of higher education. Each institution invariably responds to a variety of local influences and develops practical operational systems and cultures to account for their own unique circumstances. It is not unusual in higher education for local economic, social and political factors to determine the features and it is no less true of distance education programs, despite the rhetoric about distance education being the most industrialised and globalised mode. It is because of this that a meta-analysis would be useful in not only isolating general principles but also generating cross institutional comparisons that highlight contextual issues that can have useful practical application. Therefore, it would surely be of broad interest in the area, if the model were tested and further developed by research in another organisation providing distance education.

There are some aspects of the model that appear to require further development. The ‘motivation type’ sub-component needs to be reformulated and the social integration component needs some more refining in light of the issues surrounding the employer support and work environment sub-component.

Some issues this study has brought to the surface should perhaps also be analysed in more detail. The role that preparatory courses play in retention seemed important, but it was unclear how they should be targeted and the

extent to which the benefits of special preparatory courses (such as the University of Tasmania's *Unistart* program) for at-risk students differed from standard orientation programs. It seemed that their most positive impact lay in the way they boosted students' confidence and gave students a positive attitude towards the institution. However, it was not clear from this research if the skills they learned had an impact on their ability to succeed academically and therefore a further indirect effect on persistence.

While this research was longitudinal, the analysis of the survey was principally concerned with the status of students at the end of the study. Some students dropped out at intervals throughout the study period. In a further attrition study, it might be worthwhile and informative to undertake a more detailed analysis of the timing of withdrawals and the comparative timing of extraneous and adventitious events in the students' lives. This study indicated that, unexpected events, distractions and changes in circumstances certainly impacted on students, but their effects were complicated and sometimes inconsistent.

A significant proportion of contributing factors to attrition appear not to be directly related to a student's institutional interaction, so on the face of it students' decisions to withdraw cannot be easily influenced by the institution itself. However, it is also clear that a student's negative institutional interaction can exacerbate any other adverse factors or circumstances and tip the scale in their decisions to withdraw. Therefore, some effort and expenditure by institutions in improving institutional interaction could very well be rewarded by better retention figures.

Lastly, some refinement and a testing of the alternative model of persistence developed out of the study might provide a useful addition to knowledge on

the topic. One of the striking inadequacies of the original model was its inability to take into account the development of the students over the time of their studies. Many of the situational aspects of students changed considerably in just the two years of the study. But more importantly, most students developed, grew, and/or matured during those two years (or in some cases they became jaded, cynical and pessimistic). As a result, their goals and motivations changed and often their attitudes as well. Any test of an alternative model, should take into account the development of students over the course of their studies.

IV. SUGGESTIONS FOR INSTITUTIONS

Perhaps the most important finding from the study for institutions offering distance education programs was that concerning student contact. Most students, even the most diligent and high achieving, found studying remotely a lonely and often bewildering experience. By far the most common negative response from students was that they felt unsupported and peripheral to the 'real' learning taking place on campus. Many complained of a nagging feeling that they were missing out on something and often decried the lack of feedback that was, itself, de-motivating. Therefore, the advice to institutions would have to be to increase contact. This means not just institution to student contact but student to student contact as well. Opportunities for students to make contact and provide input should be built into courses. As not all students are confident enough to initiate contact, institutions should think of ways that require students to contact lecturers and each other in a non-threatening way. Interestingly, while students craved contact, many were reluctant to use internet chat and bulletin boards as, particularly new students felt they had a large, unknown audience and did not want to make blunders and feel foolish.

Perhaps the second most frequent cluster of negative responses revolved around students' attitude to online learning, in particular their experience of the online learning management system (WebCT). In general, they liked the system and could see its value. What they objected to was how it was used. They often lamented the fact that material was late going up, some material was poorly thought out or structured, and they especially loathed PowerPoint slides of lectures that were almost meaningless out of the context of the lecture. Students also regularly stated that material was structured in a confusing way and that digitised readings just appearing periodically without any explanatory text or suggestions of importance or priority was annoying and sometimes made them feel they were missing the point of the topic. Mayes et al. (2002) saw this type of misuse of the technology as having the potential to resurrect a 'transmission culture' in education. , noting:

'...we have witnessed a gradual shift away from the tutorial dialogue as the cornerstone of the learning and teaching experience, towards a notion of teaching through the effective delivery of information, particularly through...multimedia presentation. We observe this trend by noting a subtle shift in the language used to describe education and training. Increasingly, it is described in terms of the delivery of materials or even as the delivery of learning' (Mayes et al., 2002, p. 3).

As a suggestion to institutions it is obvious, but avoiding 'shovelware' (Orellana, Hudgins, Simonson, 2009) is a certain way of increasing students' satisfaction, and thereby their likelihood of absorbing the material and, almost as certainly, reducing attrition.

The previous two items relate to possible actions that are undoubtedly the responsibility of the institution. However, it was evident from the research that persistence (in the sense of the onus being on the student for their decisions and actions) was as important as retention (the institution's actions and decisions). However, it may well be in the institution's interest to foster

and encourage positive student attitudes and provide support in order to encourage resilience and self-efficacy in the student. Recent work on resilience (Ong, Bergeman, Bisconti, & Wallace, 2006) shows it is not necessarily innate but can be built, promoted and fostered. One of the ways this can be done is by giving students realistic expectations, coping strategies and skills of meta-cognition.

While it would be foolish to suggest that institutions can predict and have strategies for all the possible unexpected events and other extraneous influences on distance education students, there is evidence to suggest that persistence can be improved by arming students (and to some extent their families) with informative, honest communications before and during enrolment (Simpson, 2003).

As referred to in the introduction to this thesis, retention makes good financial sense, and so a willingness to outlay some resources should be seen as an investment, that wisely placed, should provide a comparatively healthy return. It is hoped that this research, by providing a more accurate model of student persistence in distance education might assist institutions in placing resources in appropriate areas and assisting students who may be vulnerable to dropping out.

All institutions should be aware that learning management systems do not solve all distance education problems. This research showed that the main reasons for withdrawal have not changed significantly in 20 years despite the advent of online learning. Indeed, while online learning has solved many of the problems surrounding communication, it has caused new problems to do with unrealistic expectations of both staff and students. Also, the technology alienates a small number of students (and an equal number, if not greater

number, of staff). The main influences on attrition remain factors beyond the direct control of institutions, factors such as unexpected events in students' lives, lack of social integration, and financial stress—none of which is ameliorated by *Blackboard* or *Moodle*. In many ways, offering online courseware is merely fulfilling the minimum expectations of a generation of web-savvy students. Providing the best learning management system does not exempt any institution from producing coherent and engaging materials, it simply enhances the possibilities and potentialities for the delivery for good, well structured content, which in turn is an essential ingredient in a very complex recipe for better student retention in distance education programs.

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APPENDICES

APPENDIX A – Questionnaires and Supporting Documents

Questionnaire (1)

Identification Code ____ (I need a way to identify you for correlation purposes. None of this information will be shared with the University or your Lecturer. On my records, this information will be encoded so it cannot be traced to individual students.)

Please answer the questions below. You are not obliged to answer all questions and you may indicate that any questions are not relevant to you by writing NA on the form. You may also write DK as a response if you feel you don't know the answer to a question.

1. Age category:				
<input type="checkbox"/> 19 or under	<input type="checkbox"/> 20-24	<input type="checkbox"/> 25-29	<input type="checkbox"/> 30-34	<input type="checkbox"/> 35-39
<input type="checkbox"/> 40-49	<input type="checkbox"/> 50-59	<input type="checkbox"/> 60 or over		
2. Gender:				
<input type="checkbox"/> Male	<input type="checkbox"/> Female			
3. Employment Status:				
<input type="checkbox"/> Not Employed, or Retired	<input type="checkbox"/> Work Part-Time	<input type="checkbox"/> Work full-time		
4. Marital Status:				
<input type="checkbox"/> Single	<input type="checkbox"/> Married	<input type="checkbox"/> Defacto	<input type="checkbox"/> Divorced	<input type="checkbox"/> Widowed
5. How many people in your household ? : ____ total (____ adults ____ children)				
6. Your average weekly income (\$)				
<input type="checkbox"/> under 100	<input type="checkbox"/> 100-150	<input type="checkbox"/> 151-200	<input type="checkbox"/> 201-300	<input type="checkbox"/> 300-500
<input type="checkbox"/> over 500				
7. How are your studies financed ?				
<input type="checkbox"/> Self	<input type="checkbox"/> Employer	<input type="checkbox"/> Other (please specify) _____		
8. What is your closest Campus/Centre:				
<input type="checkbox"/> Hobart	<input type="checkbox"/> Launceston	<input type="checkbox"/> NW Centre	<input type="checkbox"/> I live outside Tasmania	<input type="checkbox"/> I live outside Australia
9. What level is the program (course) you are now studying:				
<input type="checkbox"/> 2yr (Associate degree/Diploma)	<input type="checkbox"/> Bachelor	<input type="checkbox"/> Graduate Diploma	<input type="checkbox"/> Master	<input type="checkbox"/> Doctorate
10. What is your major subject? (e.g. Psychology) _____				
11. How many units are you enrolled in this semester? ____				
12. How many online (using WebCT or similar) units are you taking? ____				
13. Have you completed any online units prior to this semester?				
<input type="checkbox"/> No	<input type="checkbox"/> Yes			
14. How many DE units (units through the Distance Education Unit, Launceston) are you taking? ____				
15. Have you completed any DE units prior to this semester?				
<input type="checkbox"/> No	<input type="checkbox"/> Yes			
16. What was your highest level of education prior to your enrolment this year?				
<input type="checkbox"/> Grade 10 or earlier	<input type="checkbox"/> Grade 11 or 12	<input type="checkbox"/> TAFE	<input type="checkbox"/> University	
17. Number of years of university level study you have completed prior to this semester. ____ years				
18. How important were the following factors in <u>deciding to take units</u>:				
These units provide credit for my course.	Extremely Important	Very Important	Somewhat Important	Not Important
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am interested in the subjects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wanted to take units from these lecturers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wanted to take these units because of when they are scheduled.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Extremely Important	Very Important	Somewhat Important	Not
These units are relevant to my current job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
These units could be useful for my future career.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I want to get guidance and feedback in this subject.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I want to have interaction with other students to discuss this subject.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need the formal structure of a class to learn the material.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The units provide credit toward a degree or diploma.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I want to learn more about this subject or profession.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would like these units for my resume/transcript.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need to pass these units so I can take more advanced units in this subject.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. How do you use computers?				
	Daily	Weekly	Seldom	Never
I check my email.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I use a word processor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I use a spreadsheet or database program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I play computer games on my own computer (or a friend's).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I play games on the Internet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I access the Internet for school or work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I access news, weather, sports, stocks, etc. online.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I access the Internet for fun (other than games).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participate in online chats.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participate in online conferences or bulletin boards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20. How important were the following factors in your success in previous courses?

	Extremely Important	Very Important	Somewhat Important	Not Important
The quality of lectures/classes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The types of homework and projects assigned.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feedback and guidance from the lecturer/teacher.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The availability of the lecturer/teacher in his or her office or by email.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The participation/contributions of other students in the class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My study habits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The time I had available to study on my own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The time I had available to meet with other students to study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My knowledge of using the Internet to access information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. How do you feel about the following uses of computers?

	Strongly Agree	Agree	Disagree	Strongly Disagree
I enjoy using the internet as a learning tool.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoy participating in online chats or conferences with people I may not know.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online courses are a good alternative to classroom-based courses for people who can't get to the campus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most university students could learn as much in an online course as in a classroom course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. Preparation courses or orientation activities

Have you undertaken any preparatory courses or attended any orientation activities organised by the university?

☐ Yes ☐ No

Which courses or activities have you done (eg Unistart) ?

Have the courses or activities assisted you so far?

☐ Yes ☐ No ☐ Not Sure

What was your opinion of the course or activities overall?

23. To what extent do you agree you have the following qualities?	Strongly Agree	Agree	Disagree	Strongly Disagree
Well organised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adaptable and flexible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dedicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Self-reliant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conscientious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Focused and determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calculating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gregarious/outgoing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good mathematical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good at verbal communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reflective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imaginative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sensitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good analytical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Considerate of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Persuasive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spontaneous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a good memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Highly motivated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced computer skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced reading skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Capable of attention to detail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good at concentrating for long periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to think strategically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slightly obsessive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Questioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a conventional outlook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

24. Why are you doing this course?

	Strongly Agree	Agree	Disagree	Strongly Disagree
My family encouraged me to enroll.				
My employer encouraged me to enroll.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends encouraged me to enroll.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've always wanted to get a university degree.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it's important to have a degree to get a job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think studying for a degree makes you a more rounded person.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think it's a social advantage to have a degree.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I want to see if I am capable of doing it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. Have you taken any other distance education courses? ☐ Yes ☐ No

What level was the course?

- ☐ TAFE/Vocational Certificate
- ☐ Diploma/Advanced Diploma/2yr University
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctoral Degree

26. Why do you want to study as a remote student?

27. If it were possible, which mode of study would you prefer?

- ☐ Full-time on campus ☐ Part-time on campus ☐ Distance

Why? _____

Follow-Up

I may want to contact you to follow up on your university experience, or to clarify any of your answers on the questionnaire. I also wish to send you another follow-up survey next semester.

Please consider giving me the opportunity to contact you briefly if I need to. Thanks!

1 . The researcher may contact me for some follow up questions or to clarify my answers on this questionnaire:

☐ Prefer Contact by Post Address: _____

☐ Prefer Contact by Email Email Address: _____

☐ Prefer Contact by Phone Number: _____ Best Time: _____

First Name (optional) _____
(*This is so I can ask for you when I try to contact you.*)

☐ No - I do not want to answer any more questions about this research.

2. I am happy to receive a follow up questionnaire next semester:

☐ Yes ☐ No

NOTE: This page will be removed from the questionnaire after it is encoded by the researcher.

Thank you VERY MUCH for participating in this research.

Derek Rowlands

Questionnaire (2)

In a previous questionnaire you answered some questions about your studies as a remote student. This is a follow-up questionnaire for semester 2, 2003 to find out about your progress and your experiences generally as a remote student. Please answer the questions below. You are not obliged to answer all questions and you may indicate that any questions are not relevant to you by writing NA in the space on the form.

You have answered some of the questions in this section before. However, it would be helpful if you answered again in case anything has changed.

The Questions in this section are similar to some you have answered before. Please answer them in case anything has changed since semester 1, 2003.

1. Has your Employment Status changed ?

- ☐ No
☐ Yes (☐ Was full-time, now part-time ☐ Was part-time, now full-time ☐ Was unemployed now employed full-time ☐ Was unemployed now employed full-time ☐ Was employed now retired or unemployed)
-

2. Has your mode of study changed?

- ☐ No
☐ Yes (You are now a: ☐ Off-campus Student ☐ Part-Time Student ☐ Full-time Student)
-

3. Has your Marital Status changed:

- ☐ No
☐ Yes (You are now: ☐ Single ☐ Married ☐ Defacto ☐ Divorced ☐ Widowed)
-

4. Has the number of people in your household changed : ☐ No

☐ Yes (Now _____ people)

5. Has your weekly income changed?

- ☐ No
☐ Yes (Now: ☐ under 100 ☐ 100-150 ☐ 151-200 ☐ 201-300 ☐ 300-500 ☐ over 500)
-

6. Are your studies financed differently?

- ☐ No
☐ Yes (now financed by: ☐ Self ☐ Employer ☐ Other (please specify) _____)
-

7. Have you moved and are now closer to a different Campus/Centre:

- ☐ No
☐ Yes (Now: ☐ Hobart ☐ Launceston ☐ NW Centre ☐ I live outside Tasmania ☐ I live outside Australia)
-

8. What grade did you average last semester?

- ☐ Pass ☐ Credit ☐ Distinction ☐ Higher distinction ☐ Not Assessed
-

9. How many units are you enrolled in this semester? _____

10. How many online (using WebCT or similar) units are you taking this semester ? _____

11. How many traditional distance education (not online) units are you taking this semester ? _____

12. What sort of online access have you had this semester?

- ☐ Email and internet at home ☐ Email and internet at work
☐ Online Access Centre ☐ Local Public Library ☐ No internet or email access
☐ Other access (Please state) _____
-

13. Are you able to use the resources of an academic institution (not the University of Tasmania) locally?

- ☐ Yes ☐ No
-

14. Your study and your lifestyle	Strongly Agree	Agree	Disagree	Strongly Disagree
My employer has been supportive of my study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As I work long hours it is difficult to find time to study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I prefer to spend time doing other things rather than study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am very determined to finish the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My children's needs take precedence over studying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I sometimes wonder if all the study is worth the effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My spouse becomes annoyed when I spend too much time studying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My family supports my studying because they think the qualification is important.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often consider dropping out of the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I do not let anything interfere with my studies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been ill during the course, so I'm finding it difficult to keep up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I seem to have so many other things to do there is never enough time to study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I'm neglecting my friends when I study rather than go out.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A change in my work situation is making it hard to study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My spouse gives me support in my studies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I go out a lot rather than studying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My friends encourage me with my study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal/family circumstances have been hindering my study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a busy social life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I need the support of my family to succeed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like the in-depth learning at university level.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find academic study challenging and satisfying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I spend extra time finding out more about topics raised in the units I find interesting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am enjoying studying and am thinking of enrolling in another course when I've finished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'm not sure how useful finishing my course is really going to be to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I almost always attend any face to face sessions offered by the University	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often use the library's remote student service to help me with resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The distance education unit staff members are friendly and helpful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think WebCT is convenient and a helpful way to organise courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Studying and the University	Strongly Agree	Agree	Disagree	Strongly Disagree
My lecturers seem interested in me and my success in the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The orientation program offered by the University was useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The University Library's service is professional and efficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The University offers adequate networks for interaction with lecturers and other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The learning materials are presented well and are easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The library is always helpful when I request items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The type of material the library sends me is often inappropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find getting access to good resources difficult	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find the knowledge of technology needed to study nowadays is very high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find WebCT easy to navigate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have trouble accessing the University's computer network and online resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often have trouble contacting my lecturer/tutor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level and amount of work required in the assignments is more than I expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My tutors/lecturers always respond promptly to my messages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Always	Often	Seldom	Never
16. How do you usually interact with your lecturers ?				
I ask questions in study schools or using email or the internet chat room.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I volunteer to answer questions in tutorials/study schools.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I meet with my lecturers on campus about the unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to let my lecturers/teachers know something about me as a person, such as my goals, my background, or what I hope to get from the unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I communicate (talk, phone, email, etc.) with my lecturers/teachers regularly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17. Your study habits	Always	Often	Seldom	Never
I do my reading and preparation regularly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I keep up with the assignments for my courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am good at motivating myself to study regularly without being reminded by my teacher or someone else.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After taking a test, I like to check the to see if I did some of the difficult problems correctly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I benefit from working with other students in the class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I meet with other students to study.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I communicate with other students by phone or email about the course work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I like to explore a subject in more depth than what is required by the my lecturers (extra reading, online study, talk to other teachers, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Your current situation

Have you changed your course (eg BA to BEd) ?

☐ Yes ☐ No If yes, please give new course : _____

Have you withdrawn from any units last semester or this semester?

☐ No - please go to page 6 (last page)

☐ Yes - please go to question 82 below



For what reasons have you withdrawn from your units ?

UNIT CODE

REASON FOR WITHDRAWAL

Have you withdrawn from your course or discontinued studying completely?

No ☐ Please go to page 6 (last page).

Yes ☐ Please answer questions 84-85



What best describes your current situation?

☐ Taking a temporary break from studies (When do you think you will re-enrol? _____)

☐ Waiting for the availability of a unit next semester

☐ Withdrawn without any intention of re-enrolling

☐ Transferred to another institution (Name of Institution : _____)

☐ None of the above (please explain _____)

19. Which of the following best describe your reasons for your withdrawal from your course (circle the main reason and tick any others were a consideration):

I chose the wrong field of study	<input type="checkbox"/>
I think I had a lack of commitment to the course	<input type="checkbox"/>
I had financial problems	<input type="checkbox"/>
The course was not what I expected	<input type="checkbox"/>
The method of teaching did not suit me	<input type="checkbox"/>
I wasn't getting good enough marks	<input type="checkbox"/>
I needed a break from education	<input type="checkbox"/>
I didn't like the way the course was organised	<input type="checkbox"/>
There was inadequate support from academic staff	<input type="checkbox"/>
There was inadequate support from the University generally	<input type="checkbox"/>
The University was too impersonal	<input type="checkbox"/>
The quality of teaching was poor	<input type="checkbox"/>
The course was not relevant to my career	<input type="checkbox"/>
Studying caused me too much stress	<input type="checkbox"/>
I had health problems	<input type="checkbox"/>
I found the course too hard	<input type="checkbox"/>
I had housing problems during the course	<input type="checkbox"/>
The University was not what I expected	<input type="checkbox"/>
The workload was too heavy	<input type="checkbox"/>
I think I lack study skills	<input type="checkbox"/>
I think I lacked the computing skills	<input type="checkbox"/>
It was too difficult trying to work and study at the same time	<input type="checkbox"/>
I felt I was neglecting my family	<input type="checkbox"/>
I lacked support from my family	<input type="checkbox"/>
I could never find the time to do the assignments	<input type="checkbox"/>
I got a job while studying so decided to withdraw	<input type="checkbox"/>
I found the study schools intimidating	<input type="checkbox"/>
I kept having problems with the computer network	<input type="checkbox"/>
The library support was inadequate	<input type="checkbox"/>
I had trouble getting the required readings/materials	<input type="checkbox"/>
Bereavement of someone close	<input type="checkbox"/>
Pregnancy (self or partners)	<input type="checkbox"/>
None of the above (please explain: _____)	<input type="checkbox"/>

Your Comments

Please use this space to comment on any aspect of your experience as a remote student so far.

Contact Details

I may want to contact you to follow up on your university experience, or to clarify any of your answers on the questionnaire.

Please consider giving me the opportunity to contact you briefly if I need to. Thanks!

☐ Prefer Contact by Post Address: _____

☐ Prefer Contact by Email - Email Address: _____

☐ Prefer Contact by Phone Number: _____ Best Time: _____

First Name (optional) _____
(This is so I can ask for you when I try to contact you.)

☐ No - I do not want to answer any more questions about this research.

Follow-Up Questionnaires

I am happy to receive a follow up questionnaire over the next two semesters:

☐ Yes ☐ No

NOTE: This page will be removed from the questionnaire after it is encoded by the researcher.

Thank you VERY MUCH for participating in this research.

Derek Rowlands

Questionnaire (3)

In previous questionnaires you answered some questions about your studies as a remote student. This is a follow-up questionnaire for Semester 1, 2004 to find out about your progress and your experiences generally as a remote student. Please answer the questions below. You are not obliged to answer all questions and you may indicate the reason you are not answering by writing either NA (Not Applicable) or DK (Don't Know) in the space on the form as applicable.

The Questions in this section are similar to some you have answered before. Please answer them in case anything has changed since semester 2, 2003.

1. Has your Employment Status changed ?

- ☐ No
☐ Yes (☐ Was full-time, now part-time ☐ Was part-time, now full-time ☐ Was unemployed now employed full-time ☐ Was unemployed now employed full-time ☐ Was employed now retired or unemployed)
-

2. Has your mode of study changed?

- ☐ No
☐ Yes (You are now a: ☐ Off-campus Student ☐ Part-time Student ☐ Full-time Student)
-

3. Has your Marital Status changed:

- ☐ No
☐ Yes (You are now: ☐ Single ☐ Married ☐ Defacto ☐ Divorced ☐ Widowed)
-

4. Has the number of people in your household changed : ☐ No

☐ Yes (Now _____ people)

5. Has your weekly income changed?

- ☐ No
☐ Yes (Now: ☐ under 100 ☐ 100-150 ☐ 151-200 ☐ 201-300 ☐ 300-500 ☐ over 500)
-

6. Are your studies financed differently?

- ☐ No
☐ Yes (now financed by: ☐ Self ☐ Employer ☐ Other (please specify) _____)
-

7. Have you moved and are now closer to a different Campus/Centre:

- ☐ No
☐ Yes (Now: ☐ Hobart ☐ Launceston ☐ NW Centre ☐ I live outside Tasmania ☐ I live outside Australia)
-

8. What grade did you average last semester?

- ☐ Pass ☐ Credit ☐ Distinction ☐ Higher distinction ☐ Not Assessed
-

9. How many units are you enrolled in this semester? _____

10. How many online (using WebCT or similar) units are you taking this semester ? _____

11. How many traditional distance education (not online) units are you taking this semester ? _____

12. What sort of online access have you had this semester?

- ☐ Email and internet at home ☐ Email and internet at work
☐ Online Access Centre ☐ Local Public Library ☐ No internet or email access
☐ Other access (Please state) _____
-

13. Are you able to use the resources of an academic institution (not the University of Tasmania) locally?

- ☐ Yes ☐ No
-

14. Why do you think you have managed to continue studying as a remote student so far?

- ☐ I am well organised
 - ☐ I am resilient
 - ☐ I have kept myself motivated
 - ☐ I don't need formal classes to learn
 - ☐ I know what I want out of studying
 - ☐ I am determined to finish
 - ☐ The financial outlay makes it important for me to finish
 - ☐ I really want to achieve my goal of graduating
 - ☐ I am self-reliant
 - ☐ My family has really helped me
 - ☐ My employer has really helped me
 - ☐ The University has provided me with very good assistance and advice
 - ☐ I enjoy the subject
 - ☐ I don't want to let anyone down
-

15. Has anything interfered with your studies last semester or this semester?

- ☐ No – Go to 16
- ☐ Yes - Please answer (a) and (b) below

(a) Please describe the difficulties or interference:

(b) How have you coped with or overcome these difficulties?

16. Have you considered withdrawing at any time during the course so far?

- ☐ No – Go to 17
- ☐ Yes - Please answer (a) and (b) below

(a) Why did you consider withdrawing?

(b) What caused you not to withdraw?

17. Are there any activities or you have done other than this course that makes you think you are a resilient person?

- ☐ No
 - ☐ Yes Please give details:
-

20. What do you think you have gained from the course so far?

Your current situation

Have you changed your course (eg BA to BEd) ?

☐ Yes ☐ No If yes, please give new course : _____

22. Have you withdrawn from any units last semester or this semester?

☐ No - please go to page 6 (last page)

☐ Yes - please go to question 82 below



82. For what reasons have you withdrawn from your units ?

UNIT CODE

REASON FOR WITHDRAWAL

83. Have you withdrawn from your course or discontinued studying completely?

No ☐ Please go to page 6 (last page).

Yes ☐ Please answer questions 84-85



84. What best describes your current situation?

☐ Graduated from my course

☐ Taking a temporary break from studies (When do you think you will re-enrol? _____)

☐ Waiting for the availability of a unit next semester

☐ Withdrawn without any intention of re-enrolling (Why? _____)

☐ Transferred to another institution (Name of Institution : _____)

☐ None of the above (please explain _____)

85. Which of the following best describe your reasons for your withdrawal from your course (circle the main reason and tick any others were a consideration):

I chose the wrong field of study	<input type="checkbox"/>
I think I had a lack of commitment to the course	<input type="checkbox"/>
I had financial problems	<input type="checkbox"/>
The course was not what I expected	<input type="checkbox"/>
The method of teaching did not suit me	<input type="checkbox"/>
I wasn't getting good enough marks	<input type="checkbox"/>
I needed a break from education	<input type="checkbox"/>
I didn't like the way the course was organised	<input type="checkbox"/>
There was inadequate support from academic staff	<input type="checkbox"/>
There was inadequate support from the University generally	<input type="checkbox"/>
The University was too impersonal	<input type="checkbox"/>
The quality of teaching was poor	<input type="checkbox"/>
The course was not relevant to my career	<input type="checkbox"/>
Studying caused me too much stress	<input type="checkbox"/>
I had health problems	<input type="checkbox"/>
I found the course too hard	<input type="checkbox"/>
I had housing problems during the course	<input type="checkbox"/>
The University was not what I expected	<input type="checkbox"/>
The workload was too heavy	<input type="checkbox"/>
I think I lack study skills	<input type="checkbox"/>
I think I lacked the computing skills	<input type="checkbox"/>
It was too difficult trying to work and study at the same time	<input type="checkbox"/>
I felt I was neglecting my family	<input type="checkbox"/>
I lacked support from my family	<input type="checkbox"/>
I could never find the time to do the assignments	<input type="checkbox"/>
I got a job while studying so decided to withdraw	<input type="checkbox"/>
I found the study schools intimidating	<input type="checkbox"/>
I kept having problems with the computer network	<input type="checkbox"/>
The library support was inadequate	<input type="checkbox"/>
I had trouble getting the required readings/materials	<input type="checkbox"/>
Bereavement of someone close	<input type="checkbox"/>
Pregnancy (self or partners)	<input type="checkbox"/>
None of the above (please explain: _____)	<input type="checkbox"/>

Your Comments

Please use this space to comment on any aspect of your experience as a remote student so far.

Contact Details

I may want to contact you to follow up on your university experience, or to clarify any of your answers on the questionnaire.

Please consider giving me the opportunity to contact you briefly if I need to. Thanks!

☐ Prefer Contact by Post Address: _____

☐ Prefer Contact by Email - Email Address: _____

☐ Prefer Contact by Phone Number: _____ Best Time: _____

First Name (optional) _____

(This is so I can ask for you when I try to contact you.)

☐ No - I do not want to answer any more questions about this research.

Follow-Up Questionnaires

I am happy to receive the final questionnaire next semester:

☐ Yes ☐ No

NOTE: This page will be removed from the questionnaire after it is encoded by the researcher.

Thank you VERY MUCH for participating in this research.

Derek Rowlands

Questionnaire 4a

(Final Questionnaire for Continuing/Graduating Students)

In previous questionnaires you answered some questions about your studies as a remote student. This is a follow-up questionnaire for Semester 2, 2004 to find out about your progress and your experiences generally as a remote student. Please answer the questions below. You are not obliged to answer all questions and you may indicate the reason you are not answering by writing either NA (Not Applicable) or DK (Don't Know) in the space on the form as applicable.

1. What best describes your current situation?

- ☐ Graduated from my course
 - ☐ Finishing at the end of this semester - will graduate next year.
 - ☐ Still studying (When do you think you will finish? _____)
 - ☐ Taking a temporary break from studies
(When do you think you will re-enrol? _____)
 - ☐ Waiting for the availability of a unit next semester
 - ☐ Withdrawn without any intention of re-enrolling
(Why? _____)
 - ☐ Transferred to another institution
(Name of Institution : _____)
 - ☐ None of the above
(please explain _____)
-

2. Regarding the course you've been studying, to be successful, what personal qualities do you think a student would need?	Extremely Important	Very Important	Somewhat Important	Not Important
Be well organised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be adaptable and flexible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be logical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be dedicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be observant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be self-reliant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be conscientious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be focused and determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be calculating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be gregarious/outgoing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have good mathematical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be good at verbal communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be reflective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be imaginative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be sensitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have good analytical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be caring and considerate of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be persuasive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be spontaneous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a good memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be highly motivated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced computer skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced reading skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have attention to detail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be good at concentrating for long periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be able to think strategically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be slightly obsessive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be accepting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be questioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be open to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a conventional outlook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When answering the questions below please be as expansive as you can.

3. Did your goals or reason for doing the course change during the course? If so how?

4. What do/did you like most and least about studying as a remote student?

5. If it were possible, which mode of study would you have preferred do you think?

☐ Full-time on campus ☐ Part-time on campus ☐ Distance

Why? _____

6. Do/Did you find the course interesting?

7. Do/Did you like the reading matter (please comment on the content, presentation, design etc)

8. When you read the study materials do/did you follow the order in which it is presented (If not what order?)

9. Do you do the questions and activities suggested in WebCT/Study booklets? (Why/why not?)

If yes, do/did you do them all, write down answers or just think about the questions?

10. Do/Did you set aside a specific time slot each week for studying? _____

11. Is there any study technique or method you adopt when reading the course materials or textbooks?

12. How many times do/did you read the material? _____

13. Do you write notes when reading? _____

14. What do you think of WebCT (or similar) as a way of delivering courses?

15. Do/Did you attend any study schools or on-campus sessions for the course? (If not, why not and if you did, did you find them useful and why)
- _____
16. Have you ever had any study or personal problems you've discussed with anyone at the university? How do you think they were dealt with it?
- _____
17. Are the comments on assignments generally helpful? _____
18. Are assignments usually returned within a reasonable time? _____
19. Do/did you have contact with your lecturer:
- ☐ Face to face ☐ By phone ☐ By email
20. Which is the most useful?
- _____
21. What sort of thing do/did you usually discuss? _____
22. Do you feel your lecturers are remote/distant or do they seem friendly/easy to deal with?
- _____
23. Do you think they are interested in your progress? _____
24. Do you feel as though you belong to the university even though you are a remote student (Can you expand on this a little) ?
- _____
25. Do you use any of the university's facilities? Which? _____
26. What do you think of the services provided by the:
- University Library _____
- External studies unit? _____
- Service (Help) Desk? _____
27. How do you feel about how the course is administered? _____
28. How do you find communications from the University? _____
29. How do you find the University's responses to your requests? _____
30. How do you find communication about instructions, procedures and requirements? _____

31. Describe the attitude of the administration staff _____
32. What (if any) aspect of administration could be improved? _____
33. Before starting the course, how confident did you feel about your ability to succeed as a remote student?

34. Is the course what you expected? _____
35. Was the amount and difficulty of the work for the course very different to what you expected?

36. What went through your mind when it was difficult? _____
37. When you finish the course, how will you benefit from the qualification?

38. Overall, do you feel it was worthwhile enrolling in the course as a remote student?

Please use this space to comment on any aspect of your experience as a remote student or this survey.

Thank you VERY MUCH for participating in this research. Once the research is complete you will be able to view the results at <http://www.rowlands.id.au/>

Derek Rowlands

Questionnaire 4b

(Final Questionnaire for Discontinuing Students)

In a previous questionnaire you answered some questions about your studies as a remote student and indicated that you had discontinued studying. This is a follow-up questionnaire to find out if you have returned to study and to ask you to reflect generally on your experiences as a remote student. Please answer the questions below. You are not obliged to answer all questions and you may indicate the reason you are not answering by writing either NA (Not Applicable) or DK (Don't Know) in the space on the form as applicable.

14. Are you studying again at present ?

☐ No - **Please go to question 2**

☐ Yes - (Where/Which Institution? _____)

What Course? _____

Why have you resumed studying? _____

Full-time or Part-time ? _ _ _____

Please go to Question 5)

15. Do you think you will start studying again sometime in the near future?

☐ Yes

☐ No (Why? _____)

16. If you did/do start studying again would you enrol in the same course/program?

☐ Yes

☐ No (Why? _____)

17. If you did/do start studying again would you re-enrol at the University?

☐ Yes

☐ No (Why? _____)

18. Looking back on your experience, do you think the University could have done anything to help prevent you from withdrawing?

☐ No

☐ Yes (Please elaborate below)

6. Regarding the course you were studying, , what personal qualities do you think a student would need to be successful?	Extremely Important	Very Important	Somewhat Important	Not Important
Be well organised	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be adaptable and flexible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be logical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be dedicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be observant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be self-reliant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be conscientious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be focused and determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be manipulative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be gregarious/outgoing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have good mathematical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be good at verbal communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be reflective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be imaginative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be sensitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have good analytical abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be caring and considerate of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be persuasive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be spontaneous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a good memory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be highly motivated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced computer skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have advanced reading skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have attention to detail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be good at concentrating for long periods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be able to think strategically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be slightly obsessive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be accepting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be questioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Be open to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a conventional outlook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Your Comments

Please use this space to comment on any aspect of your experience as a remote student or this survey.

Contact Details

I may want to contact you to follow up on your university experience, or to clarify any of your answers on the questionnaire.

Please consider giving me the opportunity to contact you briefly if I need to. Thanks!

☐ Prefer Contact by Post Address: _____

☐ Prefer Contact by Email - Email Address: _____

☐ Prefer Contact by Phone Number: _____ Best Time: _____

First Name (optional) _____
(*This is so I can ask for you when I try to contact you.*)

☐ No - I do not want to answer any more questions about this research.

NOTE: This page will be removed from the questionnaire after it is encoded by the researcher.

Thank you VERY MUCH for participating in this research. Once the research is complete you will be able to view the results at <http://www.rowlands.id.au/>

Derek Rowlands



University of Tasmania Remote Student Research Project

May 6, 2003

Dear Fellow Student,

I am writing to ask you to participate in some research on the experiences of remote students studying at university level. I am sending you this package as I believe you are studying at a distance.

Enclosed is an *information sheet* about the research, a *statement of informed consent* and a *questionnaire*. The statement of informed consent is attached to the front of the questionnaire (this will be removed when it is returned). The research will take place over two years and participants will be sent a questionnaire at the end of each semester and might, with consent, be telephoned for a short interview.

If you decide to participate please sign the statement of informed consent and fill out the questionnaire. Leave these stapled items together, fold, and place in the pre-paid envelope. Then please put the envelope in the post as soon as you can.

I would appreciate your cooperation as the results of the research will be more accurate and useful if you do. You will never be personally identified and anything you tell me will be treated in line with the guidelines set down by the Northern Tasmania Social Sciences Human Research Ethics Committee.

Sincerely yours,

Derek Rowlands

*University of Tasmania Remote Student Research Project
P.O. Box 126, Battery Point, Tasmania, 7004
Telephone: (03) 6226 2228*

INFORMATION SHEET

Purpose of the study

This is a student project being undertaken as part of the requirements for a doctoral degree.

Statement of benefit

It is hoped that the research will lead to a better understanding of the experiences and needs of remote students and might, in the future, be used to improve services to remote students.

Criteria for inclusion

You are being invited to participate in the study because you are either enrolled at the University of Tasmania and are studying at least one unit off-campus or you are resident in Tasmania studying off-campus with another institution.

Study procedures

The study will be conducted over four semesters during 2003-2004. Data will be gathered using five questionnaires and a number of personal telephone interviews. You will be asked to complete an initial questionnaire and then another each semester until Semester 2, 2004. You will be asked if you are willing to participate in follow-up telephone interviews from time to time. Each questionnaire will take around 15 minutes to complete and the telephone interviews will be about 30 minutes in duration.

Payment to subjects

You are being asked to take part on a voluntary basis. No payment will be given. The cost of postage for returning questionnaires will be paid by the researcher.

Possible risks or discomforts

The research should pose virtually no risks to you. However, some of the questions in the survey will be of a personal and introspective nature and you might find some of them uncomfortable.

Confidentiality

Every effort will be taken to ensure the confidentiality of the data. In the investigators' records you will be identified only by a code. The key to the code will be kept separately and only for the duration of the research. Upon completion of the project, all identifying information will be destroyed under supervision. The results of the research are required to be kept for five years. They will be kept on a secure computer network server.

Freedom to refuse or withdraw

Participation is entirely voluntary. If you decide to take part in the study you can withdraw at any time without prejudice. The administration or academic staff of the University (excepting the two investigators) have no involvement in this study and will not have access to the investigators' records. You are under no obligation to answer all questions in the questionnaires or interviews - you may skip any questions you do not wish to answer.

Concerns or complaints

If you have any concerns of an ethical nature or complaints about the manner in which the project is conducted, you may contact the Chair or Executive Officer of the Northern Tasmania Social Sciences Human Research Ethics Committee.

Chair of Northern Tasmania Social Sciences HREC – Prof Roger Fay (6324 3576)

Executive Officer: Amanda McAully (6226 2763)

If you are a University of Tasmania student, you may choose to discuss any concerns confidentially with a University Student Counsellor if you have any ethical or personal concerns related to the study.

Statement regarding approval

The project received ethical approval from the Northern Tasmania Social Sciences Human Research Ethics Committee on February 18, 2003 (Project Reference No: H6989).

Results of investigation

A report of the significant findings of the study will be available to you on request once the project is complete. You can contact the investigators at any time to ask questions or seek clarification.

Contact persons

Chief Investigator: Dr Margaret Robertson, Tel. 6324 3712, Email: Margaret.Roberston@utas.edu.au

Student Investigator: Derek Rowlands, Tel 6226 2228, email: Derek.Rowlands@utas.edu.au



STATEMENT OF INFORMED CONSENT

University of Tasmania Remote Student Research Project

Statement by the subject:

1. I have read and understood the 'Information Sheet' for this study.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study will be conducted over four semesters during 2003-2004. Data will be gathered using five questionnaires and a number of personal telephone interviews. Each questionnaire will take around 15 minutes to complete and the telephone interviews will be about 30 minutes in duration. Subjects will complete an initial questionnaire and then another each semester until Semester 2, 2004. Subjects will be asked to participate in follow-up telephone interviews from time to time.
4. I understand that some of the questions in the survey will be of a personal and introspective nature.
5. I understand that all research data will be treated as confidential. All identifying information will be destroyed on completion of the project. Unidentifiable research data will be kept securely by the University for a period of five years.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
8. I agree to participate in this investigation and understand that I may withdraw at any time without prejudice and that withdrawal will not affect my academic standing.

Name of subject

Signature of subject Date

9. *Statement by the investigator:*

I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator

Signature of investigator Date.....

APPENDIX B – LETTER OF AUTHORISATION



Memorandum

UNIVERSITY OF TASMANIA

University Library

To: Derek Rowlands

From: Vic Elliott, University Librarian

Date: 21 February 2003

Subject: **Use of Horizon Patron File for Research Purposes**

I confirm that I am happy for you to use the patron file of the Horizon circulation system to identify the names of remote students at the University of Tasmania for the purposes of your research project.

I understand that that your project has been approved by the Human Research Ethics Committee (Tasmania) Network.

GPO Box 252-25 Hobart
Tasmania 7001 Australia
Telephone 61 3 6226 1793
Facsimile 61 3 6226 2878
Email Vic.Elliott@utas.edu.au