

School of Education

**Factors affecting the retention of adult students
within an indigenous tertiary institution**

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Of
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Declaration

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

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

Signature:

Date:

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Abstract

This study sought to identify influences on the retention of Māori students, and adult students in general within Te Wānanga o Aotearoa. Te Wānanga o Aotearoa is a Māori-led tertiary institution in New Zealand. A mixed method research design was employed and data were collected by qualitative methods (focus group) and quantitative methods (72-item questionnaire). Inductive and deductive analytic techniques were employed including Rasch Rating Scale model estimations (Andrich, 1978). Seven retention variables were identified. These were *student retention attitudes and behaviours, kaiako (teacher) characteristics, whānau (family) features, integration processes and institutional culture, employment and financial situation, student motivation, and pre-enrolment and induction processes*. The variables were qualified and quantified by plotting item difficulty measures and person ability measures on the same scale. Additionally, associations between variables were examined by a multiple regression analysis and analysis of variance. *Student retention attitudes and behaviours* were shown to be positively associated with *kaiako (teacher) characteristics* and *student motivation*. Also the ethnicity of the student (Māori or non-Māori) was shown to weakly account for variance in *integration processes and institutional culture*. After highlighting the key factors affecting the retention of students at Te Wānanga o Aotearoa, four propositions were made regarding ways to improve their retention. These were: Kaiako (teachers) need retention related training; External motivation for kaiako (teachers) will improve student retention; Improved student retention requires a change in institutional culture; The measurement of retention attitudes and behaviours could provide data essential for increasing retention. The study has led the way for future research in the following areas: Using the student voice to provide a grounded view of retention; Researching the area of kaiako (teachers) and pedagogy with regards to their ability to positively affect retention; Researching the role of whānau (family) features to effectively configure support programmes to positively affect retention; Identifying significant factors that contribute to adult students feelings of pressure, negatively affecting their retention.

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**I te timatanga o te ao ko te kupu.
Ko te kupu, ko te pō nui, ko te pō roa, ko te pō tangotango.
Ki te whei ao, ki te ao mārama.
Tihei Mauri Ora**

In the beginning of this world there was the word.
There was the word, the great darkness, the long darkness.
From hence came the world of light.
The breath of life.

CHAPTER ONE

Overview

In Chapter One, the current context of the study is detailed. This Chapter then identifies and discusses the problem of retaining adult students, including Māori, in tertiary education within New Zealand. The significance of this study, along with perceived limitations of the research, is then presented. Chapter One concludes by providing an overview of the structure of the thesis.

Current context

Māori are the indigenous people of Aotearoa, New Zealand. Over 150 years of colonisation and relocation has left Māori struggling to recognise their cultural identity. In the early 1900's, Māori leaders fought to bring Māori people into the new world of education. Māori had become a minority in New Zealand and the kaumatua (Māori elders) saw education as a necessity to move forward in an increasingly non-Māori world. By the early 1980's, Māori participation in tertiary education was at an all time low. In the small community of Te Awamutu, New Zealand, Dr Rongo Wetere and a team of pioneering spirits began their journey to improve Māori participation in education, a journey of persistence and courage.

Te Wānanga o Aotearoa is a Māori-led tertiary institution, multi-sited with a national spread, and has been in operation as a Wānanga since 1994. The modern institution of Wānanga was enacted by Parliament in an amendment to the Education Act in 1990. At that time, it was recognised that the realm of indigenous knowledge was not sufficiently covered by existing tertiary institutions and that educational achievements of Māori were falling behind. Te Wānanga o Aotearoa grew out of an obligation to recoup fading knowledge and to promote Māori educational goals. Te Wānanga o Aotearoa is now one of the largest tertiary education institutes in New Zealand education, enrolling 25,000 to 35,000 students

every year. Around 55% of these students are Māori and on average over 90% of the student population are adult (i.e. over the age of 25 years).

Te Wānanga o Aotearoa is one of three Wānanga in New Zealand. Alongside Te Wānanga o Raukawa and Te Wānanga o Awanuiarangi, Te Wānanga o Aotearoa seeks to advance Māori knowledge. According to Linda Smith (1999), this represents the body of knowledge which, in today's society can be extended, alongside that of existing Western knowledge. These institutions reflect an idea articulated by De Silva (1993, p. 58), "perhaps the most effective method of education for indigenous peoples is that provided by separate institutions which are run by, and for, indigenous peoples". In these three institutions, students learn within a Māori learning environment based on Māori values, traditions and customs. This is what makes Wānanga uniquely different from other mainstream tertiary institutions.

The vision of Te Wānanga o Aotearoa is education for all people, particularly Māori. This vision includes every learner being able to access educational opportunities, exercise choice, and achieve his/her full potential. This means the rewards for educational investment must be both personally satisfying and educationally relevant for the students enrolled. Te Wānanga o Aotearoa delivers a wide range of learning opportunities designed to meet the diversity of needs of adult students, including Māori, and their communities. This commitment to improving educational outcomes for Māori and other New Zealanders is central to the organisation's intent. The underlying premise of education at Te Wānanga o Aotearoa is that learning and knowledge provide a vehicle for positive cultural, social and economic transformation.

However, the traditional ethos of the New Zealand Tertiary landscape has been undergoing a major appraisal in recent times, largely triggered by changes to the way that tertiary institutions receive Government funding. The pool of Government funding is highly contested amongst tertiary institutions including Universities, Polytechnics and Wānanga, and is increasingly contingent upon

outcomes, including retention of students. This is leading to greater competition between institutions along with a demand for public accountability. Tertiary institutions now have to comply with designated performance indicators to secure funding, particularly for targeted money for specific groups such as adult and Māori students. These changes to higher education funding policies mean tertiary institutions have had to re-assess their current models of practice and instigate shifts in focus. That is, ensure higher retention rates for students, especially non-traditional students.

Te Wānanga o Aotearoa receives direct Government funding for their students, so it is in the institution's best interests to increase student retention rates. Therefore, the institution needs to pay particular attention to factors that influence a student's ability to be retained.

The problem

Retention of adult students including Māori is a crucial issue for Te Wānanga o Aotearoa. It is also becoming an issue for all tertiary education providers in New Zealand, as these students now constitute a high proportion of the student body, and yet "minority retention studies are scant" (Derby & Watson, 2006-7, p. 337). Understanding the distinctive needs of these students and how to support them more appropriately has become increasingly important in order to retain them. The review of current literature presented in Chapter Two highlights that indigenous students, and adult students in general have needs that are vastly different from their traditional aged counterparts. Also that an institution's capacity to attract and retain these students is strongly dependent on addressing these needs. While there has been a small amount of research into why these students leave tertiary education, there has been a scarcity of research into the factors that influence retention and their ability to remain engaged in tertiary education, which is the subject of this study.

There have been very few research studies in the last decade with a focus on adult or Māori student retention in New Zealand tertiary education (see Gallhofer, Haslam, Nam Kim, & Marius, 1999; Nikora, Levy, Henry, & Whangapirita, 2002). None of these studies were conducted in an indigenous tertiary institution. Statistics about adult and Māori students' participation and retention are lacking or have been collected inconsistently.

Research focus and questions

The problem is that there is increasing pressure for tertiary institutions to retain their students, including adult, and in particular Māori students who are becoming a prominent demographic within the tertiary education landscape. To do this successfully, the institution must try to identify the factors that affect their student demographic when it comes to matters of retention. Even more beneficial for the institution and its retention rates is to proactively identify influences that increase retention, rather than use a deficit theory and reactively identify factors that lead to withdrawal. If factors that increase a student's ability to be retained are identified, they may be able to be used to increase the retention rate which is in the best interest of the institution and students.

The research questions that are being addressed in this research are extremely important because they have the potential to address the key to successful retention of a unique population of students that is becoming ever more prevalent in the New Zealand tertiary education landscape.

Primary research questions

1. Can interval scales be constructed to measure variables such as *student retention attitudes and behaviours* and also the factors which influence these?
2. How do the item difficulties as measured in logits qualify the nature of retention variables?

3. What are the influences on the *student retention attitudes and behaviours* of adult students, including indigenous, within an indigenous tertiary institution?
4. Is the variance in *student retention attitudes and behaviours* attributable to a student being Māori or non-Māori?
5. Is the variance in personal, institutional, social, and environmental factors postulated to influence *student retention attitudes and behaviours* attributable to a student being Māori or non-Māori?

Significance of the study

This research is nationally significant as the success of adult and Māori students in education is a goal of most tertiary institutions within New Zealand. Increasing these retention rates will ensure that the participation and follow on contributions of these people is maximised for the overall benefit of individuals, their communities and the country as a whole.

This study is unusual in that the setting for this investigation is an indigenous tertiary institution. The findings are thus beneficial for the institution, Te Wānanga o Aotearoa, by identifying the key factors associated with retaining their unique student population. This in turn will make persisting with tertiary education a more realistic option for some Māori students and adult students in general. This is significant since retention is viewed as a critical indicator of a tertiary institution's performance and influences the revenue provided through government funding.

In gaining a better understanding of why adult learners choose to remain in tertiary education the applications of the findings are of benefit to current and future students within this demographic. The benefit being that students are able

to remain engaged in education, experience success, and use this as a foundation for individual and community transformation.

Limitations of the study

One limitation is that the data were collected at one time in the history of Te Wānanga o Aotearoa. Hence, it could be said that the study captured only some of the many factors affecting retention of adult students, particularly Māori at Te Wānanga o Aotearoa. Some may argue that sufficient information is not gained in a single snap-shot study to provide credibility of findings. The aim, however, was to capture an initial response to questions asked within a limited timeframe. However, the findings do suggest the need for future research on the retention of students using longitudinal data extending over a longer period of time with students from diverse institutions.

A second limitation is that, in this study, the students were only from one institution that has unique characteristics. So, it could be suggested that the results are only applicable to this tertiary institution and not to others. While it is possible to identify general guidelines to help institutions improve student retention, it is also clear that individual institutions face specific retention issues, often based on their particular population of students.

A third limitation is that the survey sample was small. Every attempt was made to gain a wide cross section of views from respondents with a wide range of backgrounds and experiences. However, the views elicited are likely not to be exhaustive.

The fourth limitation is that the researcher was non-Maori and this may be perceived as a limitation of the study. It is a belief held by some that only Māori people have the understandings needed to conduct research on Māori people. It is further acknowledged that research conducted from a Māori perspective, such as

kaupapa Māori, could be professed to extend and enhance the understanding and benefits for Māori adult student retention.

Despite these limitations, this study makes a significant contribution to knowledge regarding the retention of adult students including Māori.

Organisation of the thesis

This study contains seven chapters.

This Chapter, Chapter One, introduced the institutional setting in which the research took place. The perceived problem that needed to be investigated was then discussed. This investigation of the problem generated a set of research questions that were written to enable a meaningful and manageable research project to be undertaken. The potential limitations of the research were also recognised in this chapter.

Chapter Two provides a review of the literature with respect to definitions of retention. Prominent theorists and theories of retention are detailed and a critique of the most prolific theory is given. The literature review identifies six factors hypothesised to affect the retention of adult and indigenous adult students. These factors underwrite the preliminary conceptual framework for the study.

Chapter Three explains the research process. It starts with reiteration of the research problem and the research questions.

Chapter Four examines the results of the qualitative data obtained from the focus group interviews.

Chapter Five presents the findings of the quantitative phase of the research.

In Chapter Six the empirical findings of this study are discussed.

Chapter Seven, the final chapter, summarises how the research questions of the study were answered. The chapter concludes by making suggestions for future research.

Ko te manu kai to te miro, nōna te ngahere:

Ko te manu kai I te mātauranga nōna te ao

The bird that feeds on the miro berries will assume knowledge of the forest: That one which feeds on knowledge itself will have no limits placed on wisdom and understanding.

CHAPTER TWO

REVIEW OF THE LITERATURE

Overview

This Chapter reviews the literature which formed the basis of the theoretical foundation of this research. It begins with definitions of retention and the measures that arise from these definitions. Following this is an outline of the ideas of the prominent theorists in the area of student retention along with their proposed models for retention. To conclude this discussion, critical concerns regarding these models are examined. The final section of the chapter focuses on six significant factors affecting adult and indigenous adult student retention. These six factors are the preliminary conceptual framework for the empirical phases of this study.

Retention issues

The enrolment of adult students including indigenous in tertiary education has increased dramatically in recent years, but retention has continued to be problematic (Hawke, 2002). Traditional mainstream educational approaches appear to have limited effectiveness regarding success for many adult learners including indigenous. While the reasons and solutions for this lack of success are complex, there are several suggested factors that impact on these students and their ability to remain engaged in education.

Literature on student participation and retention at tertiary level most often cites student characteristics as determinants of success or failure. Evidence that students may be at risk of withdrawal or failure in the education system include a number of factors: Being unprepared for tertiary study; Lack of the social skills

needed to negotiate access and resources in the institution; Financial problems; Whānau (family) problems; and Psychological states including loneliness, isolation, low self esteem, and lack of motivation (Hall, May, & Shaw, 2001; Hawke, 2002; Promnitz & Germain, 1996). According to Hawke (2002, p. 3), adult students including indigenous may experience further barriers, including negative stereotyping of identity and ability, family obligations, lack of family support for finance or study and little opportunity to contribute “to social or political change”. Kerka (1989) states that adult students are more concerned with practical applications, and have greater acceptance of responsibility than traditional-aged students. All this results in the student role becoming a secondary activity for adult, part-time students which, in turn, contributes to lower rates of retention. This also holds true for indigenous students.

A view of this body of students is promoted in that they are lacking in skills, knowledge and attitudes that would support their success and retention in a tertiary environment. Advocates of this view recommend increased student support services and programmes to help at-risk students overcome factors such as self-doubt, lack of study skills and inappropriate attitudes to academic study. It is considered then, that students need to acculturate to the environment of tertiary study in order to gain “institutional fit and commitment” (Lake, 1988, p. 1). This deficit perspective positions the problem or difficulty within the student and releases teachers and institutions from scrutiny (Bishop & Glynn, 1999; Simon, 1990; D. Smith, 1991).

Further investigation of the literature, however, reveals the emergence of a critical approach that seeks to expose structural and/or systemic factors that impact on student participation (Abbott-Chapman & Edwards, 1998; Hall et al., 2001; Hawke, 2002; Promnitz & Germain, 1996; Simon, 1990). Authors note that so-called non-traditional groups of students have now become the “vast majority of our students” (D. Smith, 1991, p. 2).

Tertiary education institutions have for several decades been facing changes in the student population in terms of age, ethnicity, career goals, and academic preparation (Saunders & Ervin, 1984). The presence of adult and indigenous in higher education is no longer an emerging trend but a reality in many countries, particularly in New Zealand where these students are increasing in enrolments. Retaining these students requires a change in perspective among educators accustomed to dealing with the traditional non-adult student population. “The concept of persistence or retention must be thought of differently for adults” (Pappass & Loring, 1985, p.139). This concern applies to indigenous students. Adult and indigenous students present both challenges and opportunities to tertiary education providers. To serve this ever increasing population we must first recognise that they exist and that they are different from traditional students (Kilgore & Rice, 2003).

Non-traditional students in the tertiary education landscape

Despite the growth in the number of non-traditional students, many researchers find that tertiary institutions have not redefined, or equipped themselves to serve these students more effectively (Sissel, Hansman, & Kasworm, 2001). Since the early 1970’s theorists have pondered on the factors affecting retention in tertiary institutions. This problem of retention in tertiary education has sparked numerous causal theories, theoretical models, and research. However, relatively little of this research has been carried out on the capacity of an institution to retain its adult student population, and even less research is available based on retention of Māori students.

In tertiary education, the traditional student is stereotypically European, younger than 25 years old, takes a half-time course load or more, lives on or near campus, works part time or less, and often receives some financial assistance from his/her family to attend a tertiary institution (McInnis, James, & Hartley, 2000; C. Scott, Burns, & Cooney, 1996). The average adult and indigenous student on the other hand has been defined as being older than 25 years, taking a half-time course load or less, living off-campus and commuting to classes, working part time or

more, and generally having some responsibilities for contributing to family, usually involving time, energy, and often financial support (Bean & Metzner, 1985, p. 489). Within Te Wānanga o Aotearoa, adult students, in particular Māori are the majority.

New Zealand's demographic projections indicate a declining number of traditional tertiary students and a growing number of non-traditional tertiary students. Māori students, previously under-represented in tertiary education, are increasingly seeing the necessity for higher qualifications. Figures from Statistics New Zealand's website show that there has been a steady increase in Māori tertiary enrolments from 1999 (12.7% of all Māori participating in tertiary education) to 2005 (21.1% Māori participation), with Māori comprising approximately 16% of all tertiary enrolments in New Zealand. Although there has been growth in enrolment figures, this growth has been attributed primarily to growth in attendance at one of the three Wānanga. The 72% increase in enrolments in 2003 at Te Wānanga o Aotearoa is likely to be due to Māori opting more for the security and familiarity of the Wānanga cultural base (Te Wananga o Aotearoa, 2008). Unfortunately, this increase in Māori participation is not accompanied by an increase in retention - "indigenous students drop out at significantly higher rates than non-indigenous students" (Roberts, 1998, p. 40). This problem is common to all tertiary education providers in New Zealand currently, and Te Wānanga o Aotearoa is no exception.

Problems faced by adult students in tertiary education

Adult students including indigenous often struggle as they try to progress through systems of higher education that have been shaped to accommodate traditional students (Hagedorn, 2005). Strongly held social norms emphasise that formal education is for the young and that the life stages should be linear (i.e. education, followed by work, followed by the leisure of old age). Now, adults transpose or combine work with education. Also, increasing numbers of students are opting to combine work with leisure, or leisure with tertiary education well into old age. The research that has been conducted into retention within a tertiary context has largely worked with assumptions relevant to traditional undergraduate students (Kasworm, 1990). This research may be misleading when applied to adult

and Māori students. Within the realm of Māori, Te Wānanga o Aotearoa's students are often the first in the family to attend tertiary study. Also, while a large number of traditional students work (generally on a part-time basis), many Māori students, and adult students in general have full-time jobs, families, and are re-engaging learners (commonly referred to as 'second chance' learners). Māori adult students often have extended families living together or close by that create wide familial responsibilities and commitments. Research has also shown that indigenous students are more likely to withdraw from tertiary study to maintain or commence employment than other groups (Grote, 2000; Sandler, 2000), and anecdotal evidence would suggest this is true for adult students, particularly Māori at Te Wānanga o Aotearoa. Such an outcome is not necessarily regarded negatively by these indigenous students, especially since attaining a tertiary qualification may not necessarily increase the probability of employment.

Due to job and family commitments, many students may have less time and energy available than traditional undergraduates to devote to their studies. As a result, when these particular students enroll in programs of post-secondary education, they may not intend to complete their studies without interruptions (Kerka, 1995). Also, given the academic paths of many adult learners, the notions of retention and withdrawal that are applied to traditional students may have little meaning. For example, adult students taking one course at a time may easily stop-out for a term or two because of obligations in other areas of their lives. This is particularly so with Māori adult students when it comes to familial responsibilities.

While New Zealand tertiary institutions have always had an awareness of retention (Clark, 1995), they appear to be giving this area considerably more attention since the early 2000's. Until recently, New Zealand's literature on retention was not only sparse but offered few new theoretical insights. This attention on student retention has been fuelled in part by recent shifts in government strategy and policy that have given greater focus to retention. Performance-based funding is already operating in Australia and the New Zealand government has linked an element of funding to performance indicators - such as

retention. This trend of looking into retention has also been fuelled by an increase in information on retention and withdrawal. In a very short space of time, New Zealand has moved from a system where retention and withdrawal received relatively little policy attention, and where no national information (on rates of retention) was available, to one where a portion of funding is at risk if retention of students is poor, and where a large range of detailed national level data are available (The Office of the Minister of Education, 2000).

In the United States, on an annual basis, the Consortium for Student Retention Data Exchange (CSRDE) collects information on retention from 407 colleges and universities. In the 1999 data, 20% of students did not return to the same institution for a second year of study. Within this data, there were important differences based on race, the number of part time students, and institutional size. By far the lowest retention rates were for indigenous Americans (67% retention), followed by African American students (75% retention), and students of Hispanic origin (76% retention) (see Grayson & Grayson, 2003, p. 5). Rates also depended on the proportion of part-time enrolments. Institutions with fewer than 10% part-time students reported retention rates of 85% while those with more than 20% part-time students had retention rates averaging 73%. That is, those institutions with lower numbers of part time students experienced higher retention rates. The CSRDE data further showed that large institutions (18,000 students or more) reported first-year retention rates of 83%, while those with fewer than 5,000 had a retention rate of 72%. Finally, institutions with the highest entry criteria based on a student's previous education had high retention rates (87%) while those with the lowest entrance requirements reported low retention (69%). When examining figures such as these, it is important to bear in mind that reported rates of retention might bear a correlation to measures not cited rather than to the characteristics of the institutions reported by CSRDE. For example, it might be assumed that students attending institutions with high entrance requirements come from homes with relatively good incomes in which they would have had advantages denied students from low-income families. Despite the many retention strategies that have been implemented in the United States and Canada's higher educational institutions,

American Indian and Alaska Native Students are still withdrawing in large numbers. In recognising that there has been abundant research on American Indian people, Swisher argues that much of this research has not helped to meet the needs of American Indian people (Swisher, 1993 cited in Reyhner & Dodd, 1995).

In Australia, the subject of low retention rates among indigenous students has received increasing attention (Benjamin, Chambers, & Reiterman, 1993; Coladarci, 1983; Hester, 1994; Wright, 1985). For example, data in reports from the Planning Unit at the University of South Australia, and other universities, suggest retention rates of Aboriginal and Torres Strait Islander students are significantly lower than for the general student body. The National Review of Education for Aboriginal and Torres Strait Islander people also recognises that the completion rate of Aboriginal and Torres Strait Islander students is low compared to other Australians (cited in Bourke, Burden, & Moore, 1996).

In addition to the low completion rate, Aboriginal and Torres Strait Islander students are a minority in the university system (Hester, 1994). However, the situation is slowly improving from 0.3% of the students completing in 1982 to 0.9% in 1991. The completion rate varies for different level of courses. Some 42% of Aborigines and Torres Strait Islanders are enrolled in sub-degree courses compared to 11% of general students (Hester, 1994).

The low participation rate of indigenous Australian students in the university system is also highlighted by Bourke et al., (1996, p. 6) who claim that “only four per cent of the Aboriginal working age population have some form of tertiary education compared with 24 per cent of the total Australian population”. These figures may be a consequence of the approaches to education currently followed in Australian universities, and may hold some relevance to New Zealand tertiary institutions also.

Measures of retention

Retention rates have become increasingly prominent as a measure of institutional effectiveness and accountability. However, one problem identified in the literature centres around the definition of retention. There is more than one type of student retention in higher education, and there are multiple ways for it to be measured. Lenning, Sauer, and Beal (1980) have identified three measures of student retention.

First, defining retention in terms of programme completion is the most traditional measure. It assumes that the student's end goal is programme completion. However this is only relevant for some students. This is the definition used in this study, and its limitations are acknowledged.

A second, measure of retention involves measuring retention by calculating the ratio between students attending classes in the last week of a semester and those enrolled on the first day (Hagedorn, 2005; Lenning, et al., 1980). This is considered to calculate 'term completion'.

The problem with these measures of retention is that the concept of retention is typically based on the assumption of that students are motivated to finish a course of study in a predetermined period of time. However, this assumption is not necessarily applicable to adult and indigenous students. Non-traditional students interrupt or delay their completion of a course of study for many reasons. They 'stop out' to have a baby, change jobs, move house, care for an ailing parent, get a divorce, get married, move location, or simply catch their breath. 'Stop out' behaviours are often cited as characteristics of non-traditional students and it may be misleading to consider these students simply as 'dropouts' (Grote, 2000; Hagedorn, 2005; Wonacott, 2001). The absence of these students does not mean that they are not retained. Alternatively, this absence is simply a consequence of not being enrolled at a particular time.

The third method of gauging retention is referred to as positive attrition by Polinsky (2002-3). Polinsky states that retention is successful if students achieve their objectives for participating. This measure of retention takes into account the educational and/or non-educational goals of students at the beginning of their enrolment. This idea captures the fact that non-traditional students may leave education because their personal goals have been met without earning a qualification, such as mastering a certain skill or meeting a job requirement, or because they have determined that completing the programme is no longer a goal for them (Hagedorn, 2005; Holm, 1988; Lenning, et al., 1980). Further to this thinking, Appleby (2004) found that while some learners valued achieving national qualifications, others spoke of the wider benefits of learning in terms of confidence, working with others and providing new opportunities. In this study, many participants raised concerns that if learning was only to be accessed through national qualifications, it would become less relevant to their wider goals. This would clearly affect how providers view retention and an accurate description would need to consider the goals of the student on entry. Significantly, in the Appleby (2004) study, most of the participants were able to express clearly what they wanted to learn and why, and had a view on how they achieved this; they were not passive recipients of instruction.

Hadfield (2003) believes that recognition of differences between definitions of retention is critical. To address this problem in relation to adult students, including indigenous, he suggests that there are only two reasons that these students should be considered 'not retained'. These are: First, if a student transfers to another institution to complete the course of study; and Second, the only other circumstance that should remove an adult or indigenous student from the roll is death. That is, all other students should be considered retained, even if it takes them many years to complete the qualification.

Models of retention

Scholars have long held an interest in student retention, partly because it is a complex human behaviour, partly because it is related to other factors like status attainment, self-development, and the development of human capital. Also because retention theory can have an impact on retention practice. Retention studies are important to all tertiary institutions because if institutions can maintain or increase their retention rates, they can remain viable from a business perspective.

However, despite the breadth and depth of retention investigations, the most consistent aspect of retention studies is the absence of a strong theoretical framework to underpin research. Only during the last two decades have some retention researchers undertaken their investigations from strong theoretical bases, typically utilising the theoretical models developed by prominent retention theorists such as Tinto (Tinto, 1975, 1987, 1993), and Bean and Metzner (1985).

Since student retention is by definition a process that occurs over time, theoretical models tend to be longitudinal, complex, and contain several categories of variables that reflect both student and institutional characteristics. Theories of retention provide an explanation of why students leave or remain in tertiary study. Theoretical models of retention are models based on theories, while models of retention identify factors assumed to be related to retention without providing an explanation of why the factors act the way they do. Theories, theoretical models, and models are used somewhat interchangeably in the literature.

Student retention models are complex because they contain a large number of variables, often set in a causal pattern. A variable could either affect retention directly, or it could affect some other variable that has a direct effect on retention. For example, high school grades could directly affect rates of retention (e.g., the higher the high school grades, the higher the rate of retention). High school grades could also be thought to affect retention indirectly. That is, the higher the high

school grades, the higher the college grades; and then the higher the college grades, the higher the rate of retention.

Major research on retention has been conducted over several decades, primarily in the USA (Astin, 1993; Bean & Metzner, 1985; Pascarella & Terenzini, 1991; Tinto, 1993), and also in Australia (McInnis, 2003; Walker, 2000) and New Zealand (Zepke, Leach, & Prebble, 2003). Much of the current research on retention draws on Tinto's (1975, 1987, 1993, 1998) theory of student retention. This centres on the interactions between students and other individuals in the university community and how students' interpretations of these contacts affect their decisions to persist at the institution. Zepke, Leach, and Prebble (2003) suggest that much of this body of research aims to revise and improve Tinto's theories by focusing on an integration process – fitting the student into the institution.

Prior to the development of Tinto's model (1975) and the model developed by Bean and Metzner (1985), most research on retention explored a myriad of individual student variables in relation to persistence but did little to tie them together conceptually (Stage, 1988). Attempts to describe and explain the phenomenon of the lower education retention process were simply descriptive. Two theoretical models formed the framework on which present theoretical models of non-traditional student retention in higher education were developed. Cabrera Nora, and Castaneda (1993) have aptly referred to these two models as the *student integration model* of Tinto (1975, 1987), and the *student attrition model* of Bean (1982) and the subsequent conceptual model of *non-traditional student attrition* by Bean and Metzner (1985). Both models have been validated across various settings and populations (Cabrera, Nora, Castaneda, & Hengstler, 1992). Although the *student attrition model* has been validated empirically for traditional populations, its initial focus was on non-traditional student populations (Cabrera, et al., 1993).

A third model, the *integrated model of student retention* (Cabrera, et al., 1993) was developed in the early 1990's to bring the two earlier competing models

into focus within a single structural framework. Through the merger of the *student integration model* of Tinto (1975, 1987) and the *student attrition model* of Bean and Metzner (1985), Cabrera et al., (1993) examined the underlying factors that have been utilized for both traditional and non-traditional student populations. By combining two models, a more comprehensive understanding of the complex complementary and divergent capacity of each competing theory was produced.

The retention rate of adult students is lower than that of younger students (C. Scott, et al., 1996). As the life circumstances of adult students are different from those of traditional, mostly full-time students, it was originally thought that the *student integration model* might be inapplicable to adults. However, once the model was expanded to include the possibility that events outside of the institution could affect retention levels, it was found to be of use in the study of adult student retention (Sandler, 2000). Similarly, the *student integration model* was inapplicable to indigenous students until it was modified to account for external factors.

The Tinto Model – Student Integration Model

Tinto's (1975, 1993) *student integration model* is one of the most widely accepted and most cited frameworks for understanding student retention. The *student integration model* has prompted a steady line of research expanding over a decade. Tinto's theory helped guide a large number of dissertations and empirical studies of student retention (Pascarella & Terenzini, 1991). For example, Braxton (1999, p. 93), "Tinto's interactionist theory possesses near paradigmatic stature in the study of college student retention given that citations to this theory have numbered more than 400 and 170 dissertations have referenced or used it". Tinto provided an explanatory model or predictive model of student integration in which he explained the process by which individuals leave tertiary institutions before completion (Tinto, 1975, 1987). His *student integration model* suggested that common themes emerged in higher education research about retention and withdrawal relating to the dispositions of individuals who enter higher education, to the character of their interactional experiences within the institutions following

entry, and to the external forces which sometimes influence their behaviour within the institution (Tinto, 1993). Tinto established that retention was affected by the match between students' commitment to their educational goals, and their commitment to the institution (Tinto, 1993).

Tinto's theory emphasises that important predictors of persistence are academic integration (academic performance) and social integration (participation in college life). Academic integration is measured by both grades and intellectual development subsequent to college enrolment. Tinto strongly emphasises that although the two integration concepts may be related, they remain distinct. In other words, integration into one system does not guarantee integration in the other (Tinto, 1987). Integration into these systems reflects a student's judgement of 'fit' within the new setting. It also represents perceptions on the part of the student of shared values and support in the tertiary environment. This subjective sense of affiliation and identification with the tertiary community is known as 'sense of belonging'. Sense of belonging is theorised to reflect students' integration into the institution's system. All things considered, the greater the students' sense of belonging to the institution, the greater their commitment to that institution and the more likely it is that they will remain engaged and retained (Hoffman, Richmond, Morrow, & Salomone, 2002-3).

Although the model considers the attributes, skills, abilities, commitments, and value orientation of entering students, its major focus is the impact that the institution itself has, in both its formal and informal manifestations, on the withdrawal behaviour of its own students (Tinto, 1982). Even when the social and intellectual development of students may be the principal goal of tertiary institutions, retention remains an important related outcome. As an outcome, retention reflects upon the genuine concern of the institution for the social and intellectual development of students (Tinto, 1975, 1987).

Satisfaction derived from academic and social systems by students is theorised to lead to integration and subsequent retention (Pascarella, Duby, &

Iverson, 1983; Pascarella & Terenzini, 1991). It might be expected that, for example, students with good high school grades might have more well-defined career goals than their peers with low levels of high school achievement. Once enrolled, students begin to have various institutional experiences in the academic system that includes grade performance and intellectual development. Interactions with faculty and peers represent academic and social integration respectively, and, importantly, these interactions can be of consequence for grade performance and intellectual development. What can be viewed as emerging goals and commitments include the student's career and education goals, and commitment to the institution, as potentially modified by institutional experiences. For example, students may come to university with high education goals but if they are distracted from their studies such goals may be seriously compromised. Overall, the greater the individual's level of academic and social integration, the greater the student's subsequent level of commitment to programme completion and to the institution. These subsequent commitments, in turn, have a direct influence on the retention of the individual student.

Integration refers to the extent of shared normative attitudes and values of peers and faculty in the membership of the community (Pascarella & Terenzini, 1991). In other words, the sense of a student's congruence with the institution and the environment. Students enter university with various pre-entry characteristics, or cultural beliefs and values. This includes advantages or disadvantages associated with having a relatively affluent or low-income family background, varying degrees of high school preparation, and individual skills and abilities. Factors such as these are related to the initial goals, commitments, and expectations that students bring with them to their studies. Such goals, commitments, and expectations can be further divided into career and education goals, commitment to the particular institution in which students are enrolled, and expectations of the experience. Because students tend to enter college with a set of expectations of their experience (Zemsky & Oedel, 1983), such expectations serve as a gauge by which individuals appraise their early experiences with the academic and social communities of the institution (Tinto, 1987). If these expectations are not met,

there is early disenchantment with the social and academic communities. Such disenchantment hinders academic and social integration which, in turn, influences subsequent institutional and goal commitments and ultimately student retention (Braxton, Vesper, & Hossler, 1995). Put differently, students with unmet expectations for tertiary study are unlikely to become integrated into the academic or social communities of the institution because they perceive that they were misled by the institution. Moreover, such individuals are unlikely to forge subsequent commitments to the institution and the goal of completion. The failure to develop such commitments leads to the student withdrawing.

An important aspect of Tinto's theory is that tertiary retention is affected by internal operations and processes of the institution. As a result, policies can be introduced in tertiary institutions that maximize the possibility of students continuing with their studies.

Although Tinto's theory has been frequently applied to study diverse undergraduate populations, several researchers have questioned the validity of the model to fully and appropriately explain the experiences of non-traditional students or institutions outside the traditional model. Researchers who desire to study non-traditional students, students with shorter qualifications than four years, or those in a non-traditional tertiary institution have found that the Tinto model has limited applicability. Tinto's model is uniquely and explicitly suited to traditional students, within four-year mainstream institutional analysis. For example, Walleri and Peglow-Hoch (1988) cite studies that found inconsistencies with Tinto's model when applied to non-traditional populations. They propose that the inconsistencies are due to the diversity of adult students as well as to the way student progress is tracked. Their investigation of a guided studies programme for academically under-prepared adults indicates that successful students had close relationships with faculty, access to counselling, shared values, good relationships with other students, and specific career goals (Walleri & Peglow-Hoch, 1988).

Weidman (1985) applied Tinto's theory to investigate female welfare recipients in a community college and the results suggest that, for adults, the model should also consider pressures external to the college setting. Starks (1987) (cited in Kerka, 1989, p. 3) proposed restructuring the model for returning women. Starks found that, for adults, it is more relevant to define academic integration as intellectual development than good grades, and that social integration means contact with fellow students, group work, and studying together more than participation in campus activities.

Tinto's later work developed the notion of integration into institutional life and how that would benefit student retention. His ideas on learning communities (1987) were seen to be beneficial to the value placed on the academic experience by students, especially during the stages when students are adjusting to their first year of study. Tinto's focus on the communal nature of institutions highlights key indicators of effective retention: The critical role of faculty (staff) members and their close engagement with students both inside and outside the classroom as key to effective retention. He states:

The more faculty members interact with and become engaged with students, the more likely the students are to stay in college. Studies show that the students who report rewarding contacts with Faculty members are also the ones who make the greatest gains in learning and are most likely to complete their degrees. (Tinto, 1989, p. 38)

Tinto highlights the issue of commitment to students as key to successful retention. He states that "education, not retention, is the primary principle of effective retention" (Tinto, 1989, p. 38)

There is an underlying assumption in Tinto's retention model that students from a cultural background that is different from that of the institution's dominant culture need to adapt to the institution, with institutionalized attitudes relying on students assimilating to the culture of academia. The result of this is that students' cultures are viewed as a deficit (Kuh & Love, 2000). Although his later model (1993)

is similar in structure to his earlier ones, it offers another explanation of student retention which is the failure to negotiate the rites of passage. According to this theory, students would remain enrolled if they separated themselves from their family and high school friends, engaged in processes by which they identified with and took on the values of other students and faculty, and committed themselves to pursuing those values and behaviours. This assumption can be reflected in a range of behaviours among Māori, including adherence to a belief which implies success in the mainstream system is based on an acceptance of the dominant culture to the exclusion of one's own culture (Jefferies, 1997). Kuh and Love (2000) conclude this assumption needs to alter if the educational experiences of indigenous students and retention rates are to be enhanced, since the probability of retention is inversely related to the cultural distance between students' culture/s of origin and the cultures/s of immersion.

In summary, Tinto's *student integration model* generated a considerable amount of systematic inquiry into retention, particularly retention of students from first to second year. Overall, empirical research based on the model has three findings. The model:

1. Was able to explain limited amounts of variance in retention;
2. Found that the importance of various factors in the model explaining retention varied from one institution to the next; and
3. Showed that despite the claims of some critics, the important explanatory variables in the model were useful in explaining retention in both commuter and residential institutions and in both two- and four-year institutions.

The Bean-Metzner Model – Student Attrition Model

Despite empirical retention research generally profiting from adoption of the *student integration model*, the model was not without its critics. Most important in this criticism were Bean and Metzner (1985) who included in their *student attrition model* factors not included by Tinto.

Bean and Metzner's *non-traditional student attrition model* (1985) builds on Tinto's model of student retention by taking into account external factors such as environmental variables that institutions need to consider to have an effect on student persistence. This student retention model has been proven to be valid in explaining student persistence behaviour at traditional institutions, while modifications to the model have been incorporated to explain the persistence process among non-traditional students.

As a model for non-traditional student socialisation, the integration concept of Tinto remains a difficult task to achieve based on the social factors it assumes. The social experiences of non-traditional students include important external factors such as the influence of finances, outside encouragement, family responsibilities, friends and employers, and hours of employment (Andrade, 2006-7). According to Bean and Metzner (1985), Tinto does not address these external influences in his theory of retention. Bean and Metzner provide an alternative model to explain retention using an organisational process model of turnover, and a model of attitude behaviour relations and interactions (Cabrera, et al., 1993).

Bean and Metzner's (1985) conceptual model of *non-traditional student attrition* states that non-persistence results primarily from the effects of specific interactions between variables comprised by the model. In this model less emphasis is placed on the institutional integration of the student due to the characteristics of part-time study, and more focus is given to the interaction of academic and environmental variables (e.g., academic advising, outside encouragement and support), and academic and psychological variables (e.g., study habits, stress).

In this main component of Bean and Metzner's conceptualisation, they divide the exogenous factors that can affect retention into academic, social-psychological and environmental elements. The factors included in the academic category are consistent with Tinto's conceptualisation. The social-psychological

factors (the concept goals, faculty contact and social life) are also consistent with Tinto's model. However, all three environmental factors (finances, opportunity to transfer, and outside friends) are not included in Tinto's model (Rausch & Hamilton, 2006). Additionally, it must be stressed that even where there is overlap between Tinto and Bean and Metzner, the concepts are utilised differently in each model.

Despite the fact that Bean and Metzner employ similar concepts to Tinto, in their model represents a paradigmatic challenge to the *student integration model*. However, toward the late 1980's, researchers began to show that a synthesis of the two models yielded valuable results. In the introduction to a study that compared the usefulness of both models on the same group of students, Cabrera, Nora, Castaneda et al., (1992, p. 145) pointed out that:

Both models regard persistence as the result of a complex set of interactions over time. The two models also argue that pre-college characteristics affect how well students subsequently adjust to their institution. Further, the two models argue that persistence is affected by the successful match between the student and the institution. Unlike the Student Integration Model, the Student Attrition Model emphasises the role factors external to the institution play in affecting attitudes and decisions. Whereas the Student Integration Model regards academic performance as an indicator of academic integration, the Student Attrition Model regards college grades as an outcome variable resulting from social-psychological processes.

Cabrera, Nora, Castaneda et al., (1992) also highlight that empirical research on the *student integration model* indicates that academic integration, social integration, institutional commitment and goal commitment have the greatest impact on retaining students. In comparison, research based on the *student attrition model* indicates that the intent to persist, attitudes, institutional fit and external factors such as family approval, encouragement of friends, finances and perceptions about opportunity to transfer elsewhere affect decisions to stay or leave the institution. The analysis of Cabrera, Nora, Castaneda et al., (1992, pp. 152-153) based on the 1988 entering class in a "large south western urban

institution [mainly commuter]” focused on the amount of variance in retention explained by each model. While the *student attrition model* (Bean & Metzner, 1985) explained 44% of the variance in persistence, the *student integration model* explained only 38%. This said, the *student integration model* had more of its incumbent hypothesis validated than the *student attrition model*. The authors conclude that the *student attrition model* assists in revealing the importance of external factors on retention and also recommended research that would combine the insights of both models.

The Cabrera Model – Integrated Model of Student Retention

A major step towards the combination of both models was taken in 1992 by Cabrera, Nora, Castaneda and Hengstler. They concluded that the two models were complementary, rather than mutually exclusive. Both models provided empirical support for many of their hypotheses, and both models accounted for substantial amounts of variance in retention related factors such as persistence. Utilising both models would account for the impacts of the individual, the institution, and external forces on student retention. Using the same sample as in their previous research they examined the effects of Tinto’s model when combined with the ideas of encouragement from family and friends and financial attitudes found in Bean and Metzner’s model. They discovered that the greatest total effect on persistence was exerted by intent to persist followed by grade point average, institutional commitment, encouragement from family and friends, goal commitment, academic integration, attitudes toward finances, and social integration. Overall, the model accounted for 45% of the variance, while the student attrition model itself explained 44% of the variance. In essence, combining the insights of both models had only a marginal effect on predictive power over the student attrition model. However, the integrated model more realistically identified the ways in which factors internal and external to the university affected retention.

Sandler (2000) built on the work of Tinto, Bean and Metzner, and Cabrera, Nora, Castaneda et al., (1992) and added the variables of career decision making self efficacy (CDMSE), perceived stress, and financial difficulty to the evolving

model. CDMSE is defined as “the degree of confidence students express about their competency or ability (self-efficacy) to embark on informational, education, and occupational goal planning activities” (Sandler, 2000, p. 538). Sandler tested the integrated model on a sample of adult students in what is described as a ‘private urban research university’. Overall, the model explained 43% of the variance in persistence. This percentage is comparable to that found in other studies.

There are three important conclusions to be drawn from Sandler’s research. First, concerns were originally expressed about the ability of models based on research of traditional undergraduate students (under 25 years old, in residence) to explain the behaviour of non-traditional students, such as commuters, adults and minorities. Sandler’s study clearly shows that extensions of the original Tinto and Bean and Metzner models can assist in the explanation of retention among adults. Second, financial aid has a positive impact on retention. Third, although Sandler’s model explains no more of the variance in retention than other models, it more adequately theoretically addresses the complexity of processes leading to retention than its predecessors.

The Notion of Student Involvement – Astin

Before concluding this section on theoretical approaches to the study of retention it is important to briefly discuss Astin’s *notion of student involvement* embodied in his input-process-output model. According to Astin (1984, p. 297) “student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience”. Astin (1993, p. 398) states that student involvement in the institution is “the single most potent source of influence on growth and development during the undergraduate years”. In general, the greater the involvement, the more positive the educational outcomes such as retention.

Astin (1985, 1993) defines student involvement to comprise the following two criteria:

1. The student devotes considerable energy to studying; the student spends a lot of time on campus; and
2. The student participates actively in student organisations; and the student interacts frequently with faculty members and other students.

According to Pacheco (1994), these criteria outlined by Astin also fit significantly into the academic and social integration features of the Tinto (1975) *model of student attrition*. The notion of student involvement, however, serves to highlight the distinctive characteristics and circumstances of the traditional-age, full-time student compared with that of the non-traditional, adult student. The latter is typically a working student “with little available free-time and a sometimes discomfoting feeling about the cultural and class milieu of the university to stick around and get properly integrated” (Pacheco, 1994, p. 54).

Astin’s comprehensive study ‘What matters in college’ shows how institutions impact on students, and offers some important outcomes that have great potential for positive learning development. The importance of this study was Astin’s theory of ‘peer group’s effects’ where he recommends peer group support as an effective strategy for student fit and academic development, especially in the first year:

The students’ peer group is the single most potent source of influence on growth and development during the undergraduate years... every aspect of the student’s development – cognitive, affective, psychological, and behavioural – is affected in some way by peer group characteristics. (Astin cited in Feldman, 1993, p. 3)

In developing his theory, Astin builds on the view of a peer group as a group of individuals “with whom the individual identifies and affiliates and from whom the individual seeks acceptance or approval” (Astin, cited in Feldman, 1993, p. 3).

The culture of the institution and/or department also has implications for student development. Astin pointed out that joining an institution or department that is heavily research-orientated increased student dissatisfaction with various aspects of study life and had negative influences on student learning, development and growth. In comparison joining an educational institution that is strongly student focused showed the opposite effects (Pelling, 2003).

Other important findings of the research were that students from families of higher socioeconomic backgrounds enjoyed positive outcomes in tertiary education, regardless of their abilities or academic preparation (Astin, cited in Feldman, 1993, p. 4). In brief, Astin's study insists that academic performance and retention are strongly influenced by academic involvement, institution and department involvement, and involvement with student peer groups.

Although a considerable body of research makes use of Astin's ideas, Pascarella and Terenzini (1991, p. 51) pointed out, "whether Astin's propositions constitute a 'theory'... is open to question". Research establishing the importance of involvement to retention also includes recent work by Berger and Milem (1999). The importance of their research stems from the fact that they integrate the *notion of student involvement* into a model based to a degree on Tinto's conceptualisation. As Berger and Milem (1999, p. 642) highlight, most of the research testing Tinto's model has "focused on the perceptual components of academic and social integration while ignoring measures of actual behaviours". In their research they address this limitation by asking students entering a 'highly selective, private, residential research university' in 1995 questions operationalising Tinto's model. Questions on how involved they were with faculty and peers and with various aspects of campus life were also asked. Importantly, through questionnaires administered early and late in the first year, they were able to examine attitudes and behaviours just after the start of the first term and late in the second term. The results of the research indicate that in both the first and second terms involvement with faculty had positive consequences for persistence. Involvement with peers in the first term also had positive implications for eventual persistence. In both terms

non-involvement in campus activities had the largest single negative effect on persistence. Within this study it was reported that a negative effect on persistence was being a minority demographic (in this case African American that the authors refer to as Black). Social integration had a moderate positive effect on persistence while the effect of academic integration was both positive and relatively large. Berger and Milem (1999) believe that among the most important of their findings is that behaviours early in the first year predict retention behaviour between first and second year. As they point out, “the pattern of positive direct effects suggests that early involvement with faculty increases the likelihood that students will have positive perceptions of institutional support and subsequent institutional commitment, and persistence” (Berger & Milem, 1999, p. 658).

It must be noted that there is a great deal of research into retention in the United States. However, the works chosen for inclusion in this study represent those, like Tinto, that have paradigmatic status. As argued above, Tinto’s work has been extended by the inclusion of concepts relevant to events outside of the educational setting. What has not received attention is the vast amount of research that replicates or extends in minor ways ideas embodied in the synthesis of Tinto’s and other models (e.g. Bogdan & Bean, 1994; Thomas, 2000). This work is valuable but not ground-breaking, and falls into the category of normal science. It does not lead to a fundamental change in the direction established by Tinto.

Critique of the dominant model

The research of investigators such as Bean (1985, 1990), Pascarella, and Terenzini (1979, 1983, 1991) addressed the weaknesses of Tinto’s early model of persistence. These criticisms of his 1975 study led Tinto to emphasize the applicability of his model, which included stages of separation, transition, and incorporation, and to suggest these factors were integral in understanding why students leave college. However, he expanded on his seminal 1975 work by acknowledging the need to include additional ethnographic information as

background variables and to assess the role academics and social integration factored into his conceptual model of persistence.

Tinto's 1987 revision of his previous work posited five major theoretical bases for developing and understanding the evolving nature of student persistence research. Those bases included psychological, societal, economic, organizational, and interaction factors. The inclusion of those components appears to support the previous findings by Bean and Metzner (1985) that psychological and environmental factors are important variables to include when developing a conceptual model of student attrition.

Despite the revisions to his theory, criticism of Tinto models of student persistence continued. Tierney (1992) suggested Tinto's model relied on information only about traditional age students. In addition, by not individualizing results from institutional specific data, Tinto's generalizability of findings may not be plausible. Tierney took exception to a significant element of Tinto's academic and social integration theory. He suggested that Tinto misinterpreted Van Gennep's (1960) anthropological rites of passages and that this misinterpretation may "hold potentially harmful consequences for racial and ethnic minorities" (Tierney, 1992, p. 603). Tierney also noted that Tinto's theory is too broad in its treatment of social integration and does not address specific examples that could be related to non-traditional elements within higher education. For example, references to departure from a society, such as a college or university, may have different contextual meanings for different groups (e.g., indigenous). Indigenous students who enter traditional colleges and universities undergo their own form of a rite of passage, according to Tierney. These students experience a "disruptive cultural experience not because college is a rite of passage, but because the institution is culturally distinct" (Tierney, 1992, p. 608).

While Tinto declared student departure to be "value-neutral" (Tierney, 1992, p. 609), Tierney asserted that the anthropological foundation associated with this concept does not apply to all individuals in all settings, as Tinto suggested. By

omitting the term 'departure', Tierney suggested that Tinto had limited understanding and appreciation of the minority element present in American higher education, and how these groups tend to be alienated by mainstream identity. Despite the criticism, Tierney noted Tinto's awareness of his theory's imperfections: Tinto recognized that specific segments of the student population were ignored, including adults and students attending non-residential campuses.

While Tinto's perspective is interactional to a degree, it is premised on an assumed fit between students and a college environment, while the students themselves, the actual people doing the staying or leaving, are hidden from view. That is, their actions are unobserved and their voices are unheard. This has also been the case with the other major theoretical perspectives: Psychological, economic, societal and organisational. Students' traits, whether psychological, economic, social or organisational may be assumed by these perspectives to be part of the retention equation, but students, their perspectives and accounts about being retained, have received much less attention. Institutions may be better informed by a more grounded view of retention in which generalisations are drawn from the perspective of participants in the research. Such a view emphasises a 'student-centred' approach to understanding retention.

As student persistence research continued in the 1990's, Cabrera, Nora, Castaneda et al., (1992) identified shortcomings to the Bean (1985, 1990) and Tinto (1975, 1987) models on college persistence and criticized the models for excluding external factors such as parental involvement, finances, and support from friends, as possible influencers on student persistence. These researchers recognized that persistence was affected by a complex interaction of internal and external environmental variables.

Citing previous research (see Attinasi & Nora, 1992; Nora, 1990) on Hispanic student persistence, Cabrera, Nora, Castaneda et al., (1992) focused specifically on Hispanic student persistence and developed a convergent theory of the Tinto and Metzner and Bean models. This model integrated the theoretical constructs of

Tinto's 1987 revised *student persistence model* and Metzner and Bean's (1987) *academic integration model*. By combining the two theoretical concepts, Cabrera, Nora, Castaneda et al., (1992) suggested a more comprehensive understanding of student persistence at the two-year level could be gained.

In a 1993 study undertaken in response to Tierney's (1992) criticism, Tinto cited the importance of institution specific studies, and noted they tend to provide better information about the individual student than do national studies. Tinto suggested research reporting on individual students and individual institutions enhanced the total understanding of persistence and departure because policy initiatives would have a greater impact and be more relevant when reporting from a single institutional perspective. "Only institution specific studies can provide insight into circumstances" (Tinto, 1993, p. 22).

Summary

There are a number of conclusions that can be drawn from the preceding analysis of theories of retention. First, Tinto's *student integration model* has achieved paradigmatic status in the realm of research on retention. Second, Tinto's model has been applied with varying degrees of success to examinations of residential and commuter students and to students in two- and four-year colleges. Finally, increased understanding of retention is provided by an integration of the *student integration model* of Tinto along with the *student attrition model* of Bean and Metzner.

Factors proposed to affect retention

There is an argument that institutions need to be accountable for retention rates. They may experience long-term effects if low rates of retention create a negative perception among prospective students. In turn, this decrease in enrolments over time can affect funding. A number of common themes have emerged from the literature that provides a starting point for policy and program development within individual institutions. Contextual factors make each

institution's response unique and rarely can an initiative be applied in another institution (McInnis, 2003).

Students leave courses for a combination of academic, course related, social, and personal reasons. Leavers usually tend to have several reasons for leaving (Hermanowicz, 2006-7). Often those reasons are inter-related, compound one another, and are difficult to disentangle. This makes the enhancement of retention more difficult. Also many students devise pseudo reasons for leaving as a defence mechanism (Sieveking & Perfetto, 2000-1). Students leaving for reasons that may be embarrassing, or even unconscious, might suggest other common reasons, such as attributing blame elsewhere. Therefore, it is suggested that an institution should be proactive and try to ascertain what makes students stay in tertiary study as opposed to trying to ascertain the 'real' reason for departure.

Although research addressing the specific problems faced by adult and indigenous students with regards to retention in higher education has produced mixed results, studies show that the 'student psychological state' is the variable most strongly associated with student initiated withdrawal. For example, *kaiako (teacher) characteristics, whānau (family) factors, integration processes and perception of institutional climate, employment and financial factors, sense of belonging and social networks (social integration), and prior educational experience*. All these factors interact to determine the quality of the tertiary student's experiences and may affect whether a student is retained.

1. *Kaiako (teacher) characteristics*

Interpersonal relations with the teacher can be crucial for the successful completion of a tertiary qualification (Kuh, Pace, & Vesper, 1997; Stoesz, 1989). For example, a study of non-persisting doctoral students found that almost one half of these students cited a poor relationship with teacher as a significant reason for their exit (Jacks, Chubin, Porter, & Connolly, 1983). Similarly, other studies showed the most common reason for students leaving a programme was dissatisfaction

with the way their tutors approached teaching (Appleby, 2004; Fingeret & Daine, 1991; Pascarella, et al., 1997). Relationships with the tutor and with other members of the class or support networks are important to adult and indigenous students. The relationship with the tutor creates a safe learning environment that is different from the negative school experiences frequently described by adult and indigenous participants (Watters, 2003). Adult [and indigenous] students value the social aspects of learning – meeting new people, enhancing existing social skills and developing new social skills (Appleby, 2004; Hadfield, 2003; McGivney, 1996).

Many students, particularly first generation indigenous students, find it difficult to get involved with tertiary education especially with regards to the teacher, primarily due to issues regarding unfamiliarity with the environment and systems governing that environment (Rendon, Jalomo, & Nora, 2000). Indigenous students do not perceive involvement as themselves taking the initiative, but instead when someone else takes an active role in assisting them. Rendon, Jalomo, and Nora (2000) found that validation, as opposed to involvement, had played a more important role in encouraging persistence for indigenous students.

Pascarella and Terenzini (1979) examined the level of formal and informal contact between faculty (departments and staff) and students in their first year of tertiary study. The study supported the notion that more informal contact outside of the classroom between students and department staff impacts positively on retention for students. In many ways, this interaction, where students can feel comfortable sharing their thoughts and information with institutional staff, appears to fuel student desire to achieve and encourages feelings of belonging and connection with the academic community.

2. *Whānau (family) factors*

For many adult students, including Māori, issues of family and marriage create substantial obstacles to academic success. Recent studies provide ample indication as to the influence of family and community in the form of encouragement and support from significant others (Nora, Attinasi, & Matonak, 1990; Nora, Cabrera, Hagedorn, & Pascarella, 1996). This has been shown to be particularly influential for Māori students. Māori students are more likely to experience difficulty with their study because of whānau (family) responsibilities than their mainstream counterparts (Bourke, et al., 1996). Cabrera, Nora, Terenzini, Pascarella, and Hagedorn (1999) highlighted the important role played by encouragement and support from whānau (family) and communities, stating that this outweighed the issue of academic preparedness in relation to retention.

In terms of gender differences, research indicates that while marriage tends to encourage success for male students it may be more of an impediment for female students (P. Hawley, 1993; Spanard, 1990). Further, Baird (1990) suggests that women may experience stress due to multiple role conflicts (e.g., wife, mother, employee, and student). This conflict is probably most severe for those juggling motherhood and student responsibilities. This is because despite the trend toward domestic chore-sharing, most women are the primary family care-giver. Women who have children find it difficult to juggle the different areas of their lives when they return to education (Elliot, 2002). This role conflict may also explain why many women are uncomfortable securing a more advanced degree than their spouses (Cordill, 1993; P. Hawley, 1993; S. Scott & King, 1985). With regard to males, Bourke, Burden, and Moore (1996) found that the lowest incidence of retention occurred among those indigenous students who were male, and had not studied in the twelve months prior to commencing tertiary education.

3. Integration processes and institutional climate

Literature on Māori student failure in the education system up until the 1980's relied heavily on a deficit theory approach which highlighted home based factors and cultural deficit as key factors. Instead, much of the literature that followed, particularly that of Māori writers, highlighted problems associated with the institution's failure to deliver in a manner appropriate to the differing needs and cultural background of Māori.

A number of models of tertiary retention are based on the premise that social and academic integration into tertiary education systems require (at least to some extent) separation, on the part of the students, from the norms of past communities, and transition and incorporation into the new tertiary system (Astin, 1984; Bean & Eaton, 2000; Berger & Milem, 1999; Nora, et al., 1996). However, such models have been questioned because the underlying assumption of these models appears to be that students from non-dominant cultures attending a dominant culture institution are expected to assimilate into the institution. Further, institutionalised attitudes rely on students assimilating to the culture of academia. Rendon (2000) (cited in Landry, 2002-3, p. 56) describes academic shock as a feeling of alienation that moves the student from concrete to abstract experience and that takes the student from an old culture that is vastly different in tradition, style, and values to a new world of unfamiliar intellectual conventions, practices, and assumptions. Indigenous students are subject to guilt, pain, and confusion by attempting to live simultaneously in both worlds, while being accepted in neither.

Tinto says that lack of integration is due to incongruence and isolation. His *theory of incongruence* suggests that when students are unable to adopt the culture of the mainstream group, they find that staying involved in education is more difficult. Furthermore, the inability of some students to 'fit' or belong socially and academically is a frequent reason why students leave. Many researchers in Aboriginal, Native American, and Māori education cite the conflict and stress of either assimilating into the dominant culture through school, or rejecting

integration and therefore rejecting school, as being potent negative factors on retention (Dehyle, 1992; Hampton, 1993; Peacock, 1993). Peacock (1993, p. 9) claims “because of the frustrations caused by cultural mismatch, the alternative for the [indigenous] student is either resist school to maintain identity or assimilate, whereby [indigenous] children sacrifice their identity to succeed in mainstream society”. This suggests that an educational institution can force indigenous students to make a choice between cultures and by so doing denies their identity.

Hampton (1993, p. 269) suggests “an ability to adopt new traits while maintaining a traditional perspective may be a characteristic of indigenous persisters [in tertiary education]”. He suggests that the use of native language, positive attitudes toward native cultures, good school-community relations, and an emphasis on self-determination rather than integration may improve indigenous student persistence. If Hampton is correct, then the goal of the tertiary educational institutions should be to determine what institutional changes need to be established in order to improve the educational persistence of indigenous students.

Significantly, Te Wānanga o Aotearoa is one such institution. Cultural relevance and ‘fit’ have been included in the fundamental kaupapa (philosophy) of the institution (Te Wananga o Aotearoa, 2008). There is no need for Māori to assimilate into the mainstream as every aspect of the institution is derived from Māori protocols and processes. However, Te Wānanga o Aotearoa is still experiencing an extremely high withdrawal rate of its predominantly adult Māori students. This could be due to the ‘fit’ being a perception, not an ‘actual fit’, due to imposed standards and compliance of the governing body and funding arm.

There are a number of factors that have been identified as affecting the successful participation of Māori students in tertiary education (McKenzie, 2005). These include transition and adaptation to unfamiliar tertiary environments and tertiary study, inappropriate support systems, financial barriers, unwelcoming educational environments, lack of social and/or academic support, and racism. It has been noted that no one factor can be attributed to unsuccessful participation,

as it is the complex interaction of a multitude of factors that leads to poor outcomes within tertiary education.

A number of studies have commented on tertiary educational institutions being alien, unwelcoming, or hostile for indigenous students (Benjamin, Chambers, & Reiterman, 1993; Guider, 1991). Mention is also made of the high number of Māori students who are first generation participants in tertiary education, for whom adjusting to the practices and rules of a tertiary environment, without the support of whānau (family) is particularly difficult (Levy, Williams, Thompson, & Vaughn, 2002). One of the most potent factors in the decision of indigenous students to withdraw from tertiary education is isolation. This issue is highlighted in research when Rinn (1995, p. 11) states “If minorities don’t discover that sense of belonging, and many don’t, they are in danger of falling through the cracks, dropping or flunking out”. The sense of belonging is linked strongly to levels of student satisfaction within their tertiary experience and these levels can be strong predictors of persistence (Lee, Jolly, Kench, & Gelonesi, 2000). This student perception does not have to be linked with the actual circumstances. It does, however, highlight the need for indigenous students to receive positive feedback and support early in their courses, so as to relieve the possible development of a feeling of isolation, which may not be warranted by the circumstances.

Concepts of dual socialisation and biculturalism seriously challenge assumptions of separation, transition, and incorporation. This is the extent to which an individual finds it possible to operate successfully between two cultural environments and adjust behaviour according to the norms of each culture. Students should not separate themselves entirely from one culture, but as an alternative should be supported to journey between two cultures. In relation to this, the critical role of the institution cannot be overstated. However, this role is often under-emphasised in retention and participation studies. International literature has found that successful minority students are those able to create the personal, environmental, academic, and social supports required to negotiate the tertiary environment. It is important to note that the ability to create these

supports does not rest with the individual student alone, but also with the institution facilitating the development of such supports. The specific forms of support identified include cultural mediators, role models, ethnic enclaves, learning communities, and support services.

One area that seems to be missing from the research is the notion of adult student culture within tertiary educational institutions. It would be interesting to know if such a phenomenon exists, and if so, what impact does the existence of it (or lack of it) have for the retention of adult students, including indigenous, in tertiary education. Although many factors may contribute to the low retention rate among indigenous students and adult students in general, a formidable first barrier may be adjusting to the structure and assumptions of the general education system including tertiary institutions. Institutional cultural fit refers to both the content within the classroom, and the physical environment of the institution.

A majority of indigenous students attending tertiary education are first generation participants in higher education and have had to leave their family base to do so (Ramsay, Tranter, Sumner, & Barrett, 1997). First generation indigenous Māori tertiary students are faced with the greater challenge of settling in and adjusting to the assumed practices and rules of tertiary environments without the support of their whānau (family). Whānau (family) support may now have to operate from a distance or be found in campus based social networks.

It has been found that courses offered by universities at undergraduate and post-graduate levels invariably tend to ignore any cultural differences in both content and learning styles. As Hampton (1993, p. 301) points out, “Western education is hostile in its structure, its curriculum, its context, and its personnel”. In the past, the methods of western education may have been effective in teaching students of the dominant culture at the universities, but the approach appears to be less effective and perhaps inappropriate in situations involving adult and indigenous students. The National Aboriginal Education Committee (cited in Bourke, et al., 1996), observed that the current education system ignores

differences in student learning styles. The committee claimed that educational services for indigenous students have been based on the same approaches which underlie education for traditional students. These have proved inappropriate and ineffective.

Education systems appear to be unable to provide programmes that will enable indigenous students to study or learn in a culturally appropriate manner. This includes acknowledging curriculum needs and different methods of learning requiring relevant teaching methodologies. Guider (1991, p. 45) urges researchers to examine the social and psychological factors in explaining the failure of education for indigenous students. He claims:

Many of the reasons [for failure] relate to anthropological theories which highlight differences between traditional Aboriginal and non-Aboriginal values and practices. Aboriginal students' classroom behaviour, motivation to learn, styles of learning, and pattern of school attendance can be linked to traditional cultural influences.

This anthropological factor also applies in New Zealand as was noted by Jones (1991) in her study of Pacific Island and Pakeha (European) girls in the New Zealand education system.

Tinto's model (1987) maintains that students are influenced by life experiences before and during university studies. These experiences may pull the student toward or away from the academic and social communities of university. Many studies of Native American students suggest that difficulty in the adjustment to the university environment may be rooted in the differences in perception of the world and cognition or learning styles (Benjamin, et al., 1993; Hampton, 1993; Kawagley, 1990; Tinto, 1987). This theory may be extrapolated to include Aboriginal and Torres Strait Islander, and Māori students who occupy a similar position in Australian and New Zealand tertiary institutions. In support, Rendon, Jalomo, and Nora (2000) report that indigenous students are not likely to relinquish cultural affiliations in order to find membership in a new tertiary environment as

this is not a viable option given that family and cultural affiliations are sources of strength. The negative retention of some students can be explained by an inability to manage the distance between cultures of origin and institutions' dominant cultures as students either reject the institutions' attempts to socialise them or they are not able to access cultural enclaves from which to draw the support required to negotiate alien cultures (Kuh & Love, 2000).

If it is assumed that differences in learning styles have a cultural basis, then indigenous students who have a different cultural world view from mainstream students are required to adjust to the structured learning demands of university education. "Adjustment to the different learning environment and format is crucial [for indigenous student success]" (Williams, Hughes, Koolmatrie, & French-Kennedy, 1982, p. 8). Benjamin et al., (1993, p. 38) make a similar suggestion based on research with Native American students when they state:

Perhaps the abysmal attrition rate of American Indians from college is somehow tied to higher education's often unconscious insistence that they be pushed in the direction of an inappropriate notion of conforming to dominant culture persistence enhancing behaviours. More accurately, it may be that higher education is not sufficiently informed and sensitive enough to recognise or to value this culture's multifaceted manifestation of persistence behaviours.

Perhaps indigenous students are failing to remain in tertiary education because the pressure to conform to the dominant culture on which the education system is based is rejected by the student. The indigenous student's culture is overlooked and the expectations of persistence focus on members of the dominant culture.

Further examples related to institutional cultural fit that may contribute to persistence of Australian Aboriginal students are addressed by Guider (1991, p. 46). He suggests the following norms should be considered when examining the success or failure of Indigenous Australian education programs:

Aboriginals are not future oriented and devote little time to the future ... Work and activities are not bound up in small divisions of time ... Saving is also traditionally not undertaken ... Individuals are disposed to group goals and co-operate rather than compete ... Aboriginals learn through imitation and observation and through trial and error ... and through story telling and performance.

Peacock (1993, p. 5) makes similar observations and adds that the “family is more important than school attendance”. A parallel observation in referring to Māori students is that there is a tendency for Māori students to return home frequently during the school week and this is at least partially influenced by family and ceremonial responsibilities. For example attendance at tangi (funerals), or commitment to the marae (meeting house) and/or community, with such obligations often impacting on students’ abilities to progress and succeed.

In New Zealand, Jefferies (1997) makes some links with the concept of difference through raising issues relating to whānau (family) expectations and obligations for Māori students. At times their expectations and obligations impact on the ability of Māori students to participate effectively in tertiary education due to the emergence of strong feelings of guilt that participation in higher education is occurring at the expense of family responsibilities. For example, commitment back to the whānau (family) and hapū (extended family/community) with relation to marae (main meeting house) activity can be large. Māori are expected to return to the marae (meeting house) for any major event, such as a tangi (funeral) or meeting of any sort that requires staffing. For many Māori, the values entrenched in higher education, such as individualism, competition, and autonomy, directly counter their cultural values; they are being encouraged to behave in ways that they have previously learned are wrong.

With the above factors in mind, it would seem that educational institutions such as universities appear to have been unwilling, unable, or unaware of the need to meet indigenous cultural differences in respect to learning. Indigenous students

may tend to leave educational institutions earlier than other students because of such cultural neglect.

4. *Employment and financial situations*

The financial aspect of adult education is generally incorporated in studies of retention (Nora, 1990; Spanard, 1990). For example, cost is often cited as a barrier to tertiary education. Previous research has shown that students from families with larger incomes tend to be retained (or persist) more than students from families with lower incomes (Cabrera, Stampen, & Hansen, 1990; St John, 1989, 1990). The provision of financial aid has also been found to positively affect retention (Nora, 1990; St John, 1990). The impact of receiving financial assistance is in many cases paramount to students' persisting at the tertiary education level (T. Hawley & Harris, 2005-6). Also, students tend to be more responsive to increases in financial aid than to tuition reductions (St John, 1990), and the ability to pay affects the persistence decision (Cabrera, et al., 1990). There is also reason to believe that financial concerns are even more consequential for female graduate students over the age of thirty than for younger students (McGivney, 1996). It might be concluded that adult students have greater financial responsibilities at home and are more familiar with the concept of weighing costs and benefits than traditional tertiary education students. Further to this, Bourke, Burden, and Moore (1996) found that financial difficulties are a particularly critical issue for many indigenous students.

The influence of finances on retention is particularly strong for students with limited access to financial resources and who have financial commitments. In New Zealand, Māori students are more likely than other students to make use of the student loans scheme and student allowance. They also borrow a higher proportion of their maximum entitlement than non-indigenous students. In general high levels of borrowing are associated with adult students (The Office of the Minister of Education, 2000).

Concern has often been expressed in the tertiary sector about the need for students to borrow money to pay for tuition fees and living costs, and that this is a barrier to access and has the potential to impact on the participation of those groups under-represented in the tertiary sector, including Māori (Pelling, 2003). To eliminate this problem to some degree, Te Wānanga o Aotearoa provides low or no-fee education, thus reducing the impact of the barrier of cost. Whilst financial assistance is an important component of ensuring access to tertiary education, simply addressing financial elements will not in itself address the issue of retention of [adult or] indigenous adult students (R. Hill, Castillo, Ngu, & Pepion, 1999; Tierney, 1999). This may also not take into account the 'hidden' costs of education, such as travel, childcare, food, resources such as books, pens and so on.

Within the literature there are mounting concerns about whether financial pressures and the need to work are negatively affecting retention (Dundes & Marx, 2006-7). It might be expected that employment would have a negative impact on a student's ability to remain engaged in study. The need to work in order to survive has become a necessity for students in tertiary education, especially adult and indigenous students. Some students have commented on the psychological weight of the debt they are accumulating (Elliot, 2002) and the impact this has on the ability to participate in education. Anecdotal evidence within Te Wānanga o Aotearoa shows casual employment is significantly more important for those who had considered withdrawal compared to those who had not considered such an option. Students who have actually withdrawn from study unofficially indicated that employment is an important factor when looking into what influences their decision to withdraw. This has been acknowledged in a study by King and Bannon (2002) where they found that of those students who work while studying, 46% reported that working is harmful to their academic achievement and educational experience.

5. Sense of belonging and social networks (social integration)

According to Tinto (Tinto, 1975, 1993), integration into the social systems of a tertiary institution reflects a student judgement of 'fit' within the new setting. This represents perceptions on the part of the student of shared values and support in the educational environment. This subjective sense of affiliation and identification with the university community is known as sense of belonging. Relationships and feelings generated by the environment all contribute to this powerful transitional factor. Sense of belonging is theorised to reflect student integration into the educational system. All things considered, the greater a student's sense of belonging, the greater the commitment to that institution (i.e. satisfaction) and the more likely it is that the student will be retained. An analysis of the findings of Bourke et al., (1996) identified that over half the students studied had dropped out because they had not felt welcome or felt that they were unsupported by institutional staff. Bourke et al., (1996) states that social isolation played a huge role in students dropping out of their programmes. This research suggests the need for indigenous students to receive positive feedback and support early in their courses so students feel that they belong.

Although researchers frequently point to the impact of sense of belonging in departure decisions, attrition models built by researchers have failed to adequately conceptualise and include this important theorised construct. Failure to provide conceptual guidance to researchers for empirically testing sense of belonging and/or the complexity in measuring this psychological manifestation has contributed to its absence in the literature (Braxton, Duster, & Pascarella, 1988; Pascarella & Chapman, 1983; Pascarella, et al., 1983; Pascarella & Terenzini, 1983; Terenzini & Pascarella, 1980). It seems evident that the field can benefit from a more refined notion of integration, one that represents an empirically distinct sense of belonging. A refined definition may reveal why student involvement and interaction in the institution systems alone are not sufficient to ensure integration. Why integration into only one system is not enough to ensure retention, while

shedding light on factors that contribute to retention. Gaining greater clarity about the development of sense of belonging may help institutional policy planners evaluate the effectiveness of a retention strategy define more effective intervention, and contribute to early identification of student departure.

Other research indicates that enhanced student-to-student interactions foster informal relationships, which help part-time adult learners connect their classroom learning with their lives, thus fostering adult learner development (Graham & Donaldson, 1999 cited in Harris, 2006-7). Tinto (1987) believes that a common feature of effective retention programmes is making contact with students to establish personal bonds among and between students, faculty (departments), and staff. Tinto advocates the creation of a classroom environment in which all students are equal members, and develop supportive, as opposed to competitive, peer relationships. Donaldson, Graham, Martindill, and Bradley (2000, p. 8) conducted research on adult undergraduates and found that the classroom served as an important way to develop peer relationships “both before class, in class, during breaks, and after class”. These relationships were reported to be critical in creating social integration. Barnett and Caffarella (1992, p. 17) also claim that adult students have affiliation needs, defined as the “desire for learners to be connected and supportive of each other’s learning”. These strong needs for affiliation often result in students desiring to continue contact with other students, even after their programme has ended.

It is suggested by the researcher that a sense of belonging and positive social networks may be a key factor in addressing the issue of retaining indigenous students, and adult students in general.

6. Prior educational experience

Previous educational attainment and low academic preparation are closely tied to participation and persistence, especially for first generation tertiary students within a family (Richardson & Skinner, 1992). Te Wānanga o Aotearoa students are

often the first in the family to attend tertiary study. Some students are better prepared for the demands of tertiary study than others. For example, a significant portion of non-persisters come from the most educationally disadvantaged segment of society; that is, those with no prior qualification or work experience. These students are more likely to lack self-confidence, self-esteem, and to have negative attitudes towards education (Hayes, 1988; Kerka, 1988).

Past schooling is also a key factor in predicting future success (Gaide, 2004; Quigley & Uhland, 2000). In a study performed by Rausch and Hamilton (2006) it was found that the participants related having a lack of adequate high school preparation for university life and study to the ability to remain engaged in tertiary education. In this research, the participants generally related that their high school classes were too easy, they had not learned effective studying skills in high school, and they lacked the time management skills needed to balance study, working at a job, and a social life. The participants also described their own lack of preparation, which included choosing a university late in the process, which made it difficult for many of the participants to adapt to university life (Rausch & Hamilton, 2006). This research indicates that the more successful the past schooling, the more likely the student is to persist in tertiary study.

Recount

Much has been written about student retention. It is one of the more widely researched topics in tertiary education. What is clear from the research is that no simple model exists, and that retention or withdrawal decisions can result from a range of interacting factors.

Adult satisfaction with and continued participation in formal learning are not the consequences of one easily isolated factor in the interactionist paradigm, but rather a complicated response to a series of issues confronted by the individual adult in his or her unique situation as a 'universe of one' (MacKinnon-Slaney, 1994, p. 3).

The issue should be considered multi-dimensional and complex. Highlighted factors may impact differently on different students, and may be beyond the control of either student or institution. However, persistence to continue tertiary education, like most significant education-related decisions, is likely to result from previous experiences as well as the influence of situations both within and beyond the control of the individual and/or the institution.

Summary

This chapter presented various definitions of retention from the literature. Significant theories of retention were also outlined and critiqued. Finally, Chapter Two concluded by outlining six factors affecting retention of Māori students, and adult students in general. Chapter Three explains the research methodologies and methods, and presents the research questions to be investigated in addition to describing how the theoretical framework was developed.

**Māku anō hei hanga I tōku nei whare,
Ko ngā poupou he māhoe, he patate.
Ko te tāhuhu he hinau.
Me whakatupu ki te hua o te rengarenga
Me whakapakari kit e hua o te kawariki.**

I shall fashion my own house,
The support posts shall be of Māhoe and patate.
The ridge pole of hinau.
The inhabitants shall be raised on the rengarenga
And nurtured on the kawariki.

CHAPTER THREE

RESEARCH METHODOLOGY AND METHODS

Overview

This chapter describes the research methodology and methods applied in the study. It commences with the research problem and questions. Next, theoretical issues are explored leading to specification of a mixed-methods research design. Within the qualitative and quantitative phases of this design, sampling, instrumentation and data analysis are discussed.

Research problem and questions

Retention of Māori students and adult students in general is a recurrent and perplexing problem for providers of education. Retention is a popular subject in the literature, as researchers attempt to identify characteristics of and motivators for adult and indigenous adult students and the factors that influence the decision to remain engaged in, or withdraw from, tertiary study. Although some research has addressed the issue of why adult students, including Māori withdraw from tertiary settings, the problem of how to retain these students still remains. In the multicultural milieu that makes up the landscape of higher education today, many students struggle in the traditional settings of western tertiary education. Indigenous tertiary institutions such as Te Wānanga o Aotearoa deliver both traditional and non-traditional programs and attract a high proportion of Māori and adult students. Unfortunately, as in traditional settings, a high proportion of these students are failing to be retained. The costs for the institution of this withdrawal rate are huge, both to finances and reputation. The costs of withdrawal are also borne by the withdrawn student in terms of lowered self-esteem and lost potential, by society in terms of lost productivity, and ultimately the taxpayer. The retention

problem also has the potential to divide an institution, with teaching staff blaming marketing enrolment officers for recruiting and enrolling the wrong kind of students, and other staff blaming the student support people for not providing a supportive environment once students get to class (Chenoweth, 1999). All these issues regarding lack of retention have the potential to be hurtful and damaging for an institution, for the individual/whānau (family) success, and for community development. This research has examined the factors that influence retention in an indigenous tertiary institution.

The research questions were:

1. Can interval scales be constructed to measure variables such as *student retention attitudes and behaviours* and also the factors which influence these?
2. How do the item difficulties as measured in logits qualify the nature of retention variables?
3. What are the influences on the *student retention attitudes and behaviours* of adult students, including indigenous, within an indigenous tertiary institution?
4. Is the variance in *student retention attitudes and behaviours* attributable to a student being Māori or non-Māori?
5. Is the variance in personal, institutional, social, and environmental factors postulated to influence *student retention attitudes and behaviours* attributable to a student being Māori or non-Māori?

Research approach

Mixed methods research

Mixed-method methodologies employ strategies of inquiry that involve collecting different types of data in order to best understand the research problem. The data collection for this study involved gathering textual information (focus group data) and numeric information (questionnaire data) so the collected data could be analysed both inductively and deductively. The combination of methods allows for a level of depth and breadth not attainable from one method. Thus, the methods combine to give results from which more accurate inferences were made as the domain of enquiry was considered less likely to be constrained by the method itself (Creswell, 2003; Tashakkori & Teddlie, 2003).

According to Tashakkori and Teddlie (1998), amongst others, qualitative and quantitative methods may be used appropriately with any research paradigm and neither method nor paradigm should have pre-eminence over the research question. Brewer and Hunter (1989, p. 17) are of the opinion that most major areas of research in the social and behavioural sciences now use multiple methods as a matter of course as such an approach allows investigators “to attack a research problem with an arsenal of methods that have no overlapping weaknesses in addition to their complementary strengths”. Denzin (1978) also argues that a hypothesis which has survived a series of tests with different methods can be regarded as more valid than a hypothesis tested only with the help of a single method. In a similar vein, Rossman and Wilson (cited in Greene & Caracelli, 1997, p. 257), identify three rationales for adopting a mixed method research design. They advance the argument that it allows for corroboration, as in establishing convergence of results; elaboration, as in providing richness of detail; and also, initiation which “prompts new interpretations, suggests areas for further exploration, or recasts the entire research question”.

Applying the mixed methods approach

This study adopts a mixed-method integrated design research approach. Both qualitative and quantitative methods were utilized at different points in the study. The rationale for utilizing this particular design was to attain a greater integration of the different method types and to yield a depth and breadth of information that was not possible if only one approach had been selected. This approach is called triangulation and is often advanced as the main advantage of the mixed methods approach. In this study, triangulation enabled increased assessment of the influences or multiple factors that influenced the results.

Along with triangulation, Greene, Caracelli, and Graham (1989) highlight additional benefits for using mixed methods based on four research designs. First, the complementarity design clarifies and illustrates results from one method with the use of another method. In the case of this research, focus groups added information about the reasons students are able to remain engaged in tertiary education and the survey data qualified the findings with statistics. Second, the development design allows one method to shape subsequent methods or steps in the research process. With regard to this study, focus group information was used to shape the theoretical framework informing the questionnaire. Greene, Caracelli, and Graham (1989) also refer thirdly to the initiation design. Initiation stimulates new research questions or challenges results obtained through one method. In this case, focus groups with students provided new insights into what factors enable them to be retained, or to withdraw from study. Finally, the expansion design provided richness and detail to the study, exploring specific features of each method. In this study, integration of the procedures of focus groups and surveys expanded the breadth of the study and enlightened the more general debate on retention. In summary, the mixed methods approach enhances results in terms of quality and scope.

Researchers need to be clear about their own beliefs regarding the nature of the phenomenon under investigation and their relationship to it. Generally, beliefs

and purposes shape views of the world; they form paradigms. Guba and Lincoln (1994, p. 116) state that “paradigm issues are crucial; no inquirer, we maintain, ought to go about the business of inquiry without being clear about just what paradigm informs and guides his or her approach”. A paradigm can be thought of as a set of philosophical assumptions defining the nature of possible research and intervention (Mingers & Brocklesby, 1997). Paradigms represent certain shared philosophical understandings, terminology, rules and research approaches adopted by a particular community that continuously evolve as they are negotiated and debated within communities. They have the effect of filtering information and influencing peoples’ perceptions and allowing the accommodation of new ideas or anomalies.

Thus, from the mixed methods viewpoint, paradigms are viewed as tools, meaningful only within the context of their use and one approach is not necessarily preferable to another when it comes to particular problem-solving requirements. Paradigms are not mutually exclusive, but provide a focus on different aspects of reality; the combination of methods within a single study provides a richer understanding of a topic (Mingers, 2001). Different paradigms may also be appropriate within different phases of a single study in response to different tasks and problems. A mixed methods approach underpinned by positivism forms the philosophical base for this research.

Positivism characterises epistemologies that seek to explain and predict what happens in the social world by searching for regularities and causal relationships between constituent elements (Burrell & Morgan, 1979). In essence positivism argues that:

1. Reality consists of what is available to the senses;
2. Inquiry should be based on scientific observation; and
3. The natural and human sciences share common logical and methodological principals, dealing with facts and not with values (De Vaus, 2002; Grey, 2004; Neuman, 2003).

This theoretical perspective fits with the worldview of the researcher and influenced the choice of methodology to be applied. Positivism is primarily concerned with proving or disproving a hypothesis, and not only investigating how the phenomena occurred. Positivist research designs place a premium on the early identification and development of a research question and a set of hypotheses, choice of a research site and establishment of sampling strategies, as well as a specification of the research strategies and methods of analysis that will be employed (Denzin & Lincoln, 1998).

Measurement

Measurement models can be classified according to either of two approaches to measurement – the determinist approach and the stochastic approach. “In deterministic measurement models such as those that underpin classical test theory and true score theory, the relation between the observed responses and person ability is explicated as a causal pattern” (Bond & Fox, 2001, p. 229). That is, raw scores are often taken as a measure of a person’s ability (Bond & Fox, 2001). In contrast, the stochastic approach is probabilistic and also takes into account both what is being measured and who is being measured but assumes separation between these two parameters - mutual conformity and separability (Rasch, 1960).

The decision to use a stochastic measurement model such as the Rasch rating scale model rather than a deterministic model, was primarily due to the first research question concerning constructing an interval scale (Bond & Fox, 2001). Implicit in this objective was the necessity for compliance with stringent measurement requirements. That is, the need for: Dimensionality – the data measures a single or dominant trait; Qualification – data can be compared; Quantification – variables are measured in common units; And linearity – data is positioned on a line or scale (Wright, 1999; Wright & Masters, 1982). The secondary reason for using the stochastic measurement model was the need for

interval rather than ordinal data for the subsequent stages of the research in which parametric techniques were applied (Fraenkel & Wallen, 2004).

The items (questions) within a well constructed test (questionnaire) should be ordered in terms of their difficulty and, concurrently, the instrument should also produce hierarchically ordered scores for persons according to their ability. Poorly targeted instruments will not lead to precise estimates of individuals on the trait. The separation is achieved by using a probabilistic approach in which a person's raw score on a test is converted into a success- to-failure ratio and then into the logarithmic odds that the person will correctly answer the items – a logit. A logit is the logarithmic odds that a student's statements about attitudes or other attributes apply to himself/herself, and for all persons.

When they are estimated for all persons, the logits can be plotted on one scale. The items within the instrument can be treated in a similar manner by examining the proportion of persons who correctly answered an item and converting this into the logarithmic odds of the item being successfully answered – a logit. When this is estimated for all items, the logits can be plotted on one scale. A person's logit score can then be used as an estimate of that person's ability and the item logit score can then be used as an estimate of that item's difficulty. The Rasch model is thus used to calculate personal abilities, to calculate item difficulties and then to plot the person abilities and item difficulties on the same scale. Most importantly, when the data fit to the Rasch model, the instrument and the data conform to the requirements for objective measurement (Wright & Masters, 1982).

A Rasch measurement model analysis shows how well data fit a conceptual model of the trait of persons being tested. The separation of person and items measured in an analysis enables the fit of data from a single item to the conceptual model to be estimated. This is displayed as *individual item-fit* in the analysis. Estimation of the Chi-square statistic informs instrument refinement by showing which items have elicited data which fit the model well – items shown as having a poor fit can be deleted from questionnaires or tests. Also, the item fit residuals -

the difference between actual scores and scores expected by application of the Rasch model - indicate which items are contributing to measurement errors within the data and this information can be used for refining the instrument to improve the precision of the measure.

Application of the Rasch model can reveal otherwise hidden aspects of data. It is advantageous to view data in order to generate a complete understanding of how well an instrument is working and to identify modifications that might improve the measurement properties of the instrument (Curtis & Boman, 2007). Rasch modelling provides information about item scale reliability indices, about individual items through location parameters and item fit indices, and about individual item thresholds through their locations and standard errors. Using information at each of the three levels can assist in diagnosing the sources of scale deficiencies. Other facets of measurement scales must also be considered and we refer to person fit and to systematic bias in instruments.

By using the Rasch model, much detailed diagnostic information is available to developers of survey and assessment instruments and to the researchers who use them. Application of the Rasch model through software such as RUMM2020 (RUMM Laboratories Pty Ltd, 2007) provides estimates of person and threshold locations on the latent variable scale. The software also yields indices of item and person fit to show that the requirement of uni-dimensionality is met.

The data sets that were analysed came from surveys comprising polytomous items. The raw data derived from these instruments were ordinal and do not directly yield measures (interval or ratio scales) of the constructs that the instruments are designed to assess. However, provided items in the scale comply with certain axioms of measurement, there is sufficient information in the ordered responses to enable item thresholds and person locations to be mapped stochastically onto latent interval variables. Several requirements must be satisfied about individuals' responses to items in tests and survey instruments. Weiss and

Yoes (1991) stated four requirements of measurement which may be paraphrased as:

1. Individuals respond honestly to item prompts;
2. Items are indicators of a uni-dimensional latent trait;
3. Items are locally independent; and
4. Item responses can be modelled using monotonic function.

In summary, the study sought to construct interval scales (rating scale instruments) and to generate data that were measures. The construction of the rating scale instruments applied the Rasch Model (Rating Scale Analysis) and the computer program RUMM2020 (RUMM Laboratories Pty Ltd, 2007). The specific measures that were developed will be presented later in this chapter.

Research design

The basic design comprised two-phases using different methods. Phase One was a qualitative investigation using the focus group interview technique. Phase Two was quantitative including construction of linear scales, Rasch model analyses, and parametric testing of calibrated data from multiple instruments to examine associations between variables.

The linkages between research activities were conceptual in that the results of one activity assisted in provision of the conceptual framework for the next. For example, the results of the Phase One focus group interview process informed development of the conceptual framework for constructing the rating scale instruments in Phase Two. However it is also important to reiterate that the predominant components of the construct model for Phase Two were developed from the review of literature conducted prior to the empirical study.

Phase One - Qualitative investigation

In line with the research aims and objectives, the study focused on factors affecting the retention of Māori students, and adult students in general within an indigenous institution (Te Wānanga o Aotearoa) in New Zealand in order to identify factors impacting on their ability to be retained.

The first phase of this study relied on a qualitative research method in the form of a hui (focus group) to collect primary data from selected respondents. This procedure was preferred because there has been little investigation of this nature undertaken with adult (including indigenous) populations, and qualitative methods are particularly oriented towards exploration and discovery of social phenomena through the use of inductive processes (Minichiello, Aroni, Timewell, & Alexander, 1995).

The focus group interview technique

Focus groups combine elements of both interviewing and participant observation. This is seen to be as useful in answering questions as in-depth interviews, but in a social context. The focus group session is indeed an interview not a discussion group, problem-solving session, or decision-making group (Patton, 1990). At the same time, focus groups capitalise on group dynamics, and the trademark of focus groups is the clear use of the group interaction to produce data and insights that would be unlikely to emerge without the interaction found in a group. There appears to be no ideal number of participants in focus groups. Sarantokos (1998, p. 182) suggests “between 5 and 12” , and Creswell (2003) says ‘six to eight’ people are brought together. Both authors suggest that the numbers should be sufficient to encourage a good quality of discussion about the research questions. The eight participants that responded and were subsequently involved in the focus group were considered sufficient to make the focus group functional.

This process of focus group interviewing also had advantages for the participants with regard to cultural process. Māori tend to hold hui (discussion

meetings/focus groups) to discuss and consult on many varied topics. This method of consultation and investigation is traditionally used in Māoridom so that individual and group contributions can be maximised by the contributions of everyone involved. Also, Māori culture is very inclusive, and by adopting this method, participants (who are all students at a Māori led tertiary institution with Māori culture as its uniqueness) may more easily discuss sensitive matters. Through this open discussion, the researcher was able to examine what is already known with regards to adult student retention, particularly that of Māori, and also was able to identify other factors not yet identified by the literature.

Preliminary conceptual framework

The preliminary conceptual framework of retention factors was developed from the key concepts from the literature review. This conceptual framework posited that there were six major factors affecting the retention of students. These were:

1. Kaiako (teacher) characteristics;
2. Whānau (family) features;
3. Integration processes and institutional culture;
4. Employment and financial situation;
5. Sense of belonging and social networks (social integration); and
6. Prior educational experience.

These six factors were used to construct the interview schedule.

Interview schedule development

An interview schedule was developed using the preliminary conceptual framework. Supplementary questions were added to the interview schedule in order to clarify and expand on points raised if needed. Also, prompts and suggestions were added to the schedule in order for the researcher to clarify or expand discussions with the participants.

Sampling

For Phase One, the population was students at Te Wānanga o Aotearoa over the age of 25. This population was further limited to students studying from a Tainui campus (one of five rohe [regions] of Te Wānanga o Aotearoa). This restriction was in order for the researcher to have access to students in the same geographical area as herself. This provided a population of 2,461 from which to draw the sample.

From the population of 2,461, a small representative sample of 30 students was selected by simple random sampling using a random number chart (Diem, 1962). Within this sample, there were 21 females and nine males, with an age range of 26 to 60 years (average age 36 years). Due to historically low return rates from Te Wānanga o Aotearoa students in institutional surveys, 30 invitations to be involved in the focus group were sent out.

Entrée into the interviews

To maintain confidentiality for those who did not wish to participate in a focus group, Te Wānanga o Aotearoa Head Office Student Registry Division sent out information sheets (see Appendix A) and consent forms (see Appendix B), along with a return pre-paid envelope to the 30 potential participants randomly selected. The same information was also sent out via email to participants (where email was recorded with the Student Registry Division) in case they had re-located and did not receive the post mail. This email contact was included due to the transient and nomadic nature of Te Wānanga o Aotearoa students. One envelope was returned to the sender, and of the 27 emails sent, seven were returned to the sender's email account as no longer active addresses.

From this, eight consent forms were returned, completed and stating willingness to participate in the focus group. This represented a return rate of 26% for interview participation.

On the return of the eight signed consent forms, a confirmation letter was sent to the respondents thanking them for their intended contribution and confirming a date for the focus group that gave three weeks prior notice. The participants were invited to be involved in a focus group that lasted approximately 60 minutes. At this time participants were also assigned a alphabetical pseudonyms that were used in every aspect of the study. The researcher facilitated this focus group. The interview was tape-recorded on a dictaphone, and field notes were also documented by the researcher.

The group of participants that met for the hui (focus group) consisted of seven female and one male student. The age distribution was 26 years to 50 years with the average age being 37 years. Three had withdrawn at some stage during the year, five were retained until course completion, and five participants identified as Māori. These participants are detailed in Table 3.1 below.

Table 3.1.
Focus group participants

Alphabetical pseudonym	Gender	Age	Retained/withdrawn	Ethnicity
A	M	43	R	Māori
B	F	26	R	Māori
C	F	32	W	Non-Maori
D	F	45	R	Non-Maori
E	F	50	W	Māori
F	F	29	W	Māori
G	F	36	R	Non-Maori
H	F	36	R	Non-Maori

Interview procedure

At the commencement of the interview, participants were given a brief verbal explanation of the research. The following points were stressed to participants: the interview was strictly anonymous, and no one other than the researcher would know who had taken part; the participant should be as open and honest as possible; there are no right or wrong answers to the questions posed; the participant should indicate any question he or she does not wish to answer and this would be respected by the question being passed over; and the participant would

be able to discontinue their participation in the study or halt the interview at any stage.

The ethical matters of anonymity, confidentiality and informed consent were also discussed at this time. First, it was stated to the group that anonymity means that no one would be identified by any participant to someone outside of this group. Second, the information from this focus group would be kept confidential and protected, in a locked secure location, and would be accessible only by the principal researcher prior to destruction in five years time. It was also stated that what occurred within the time of the focus group was to stay confidential to all participants. No discussion of what was discussed and/or by whom should be mentioned outside the focus group. Third, the informed consent form was discussed. It was stated that as a reminder, participation in this group was voluntary. Participants were told that they could leave at any time and that they could do so without having to give a reason, and also that they did not have to answer any questions that they did not feel comfortable in discussing in this forum. Finally it was stated that participants' time was appreciated and recognition of its value was given, with assurance that the focus group was a safe environment to discuss their thoughts and experiences relating to the subject at hand.

These semi-structured interviews were conducted within an open framework (see Appendix C), which allowed for focused, conversational, two-way communication. The focus group participants were asked to reflect on questions asked by the researcher, and the participants were permitted to hear each other's responses and to make additional comments beyond their own original responses after they heard what other people had to say. It was not necessary for the group to reach any kind of consensus, nor was it necessary for people to disagree.

Interview data analysis

The qualitative data were analysed using a combination of deductive and inductive processes. The deductive process is narrower in nature and is concerned with testing or confirming hypotheses. Inductive reasoning, by its very nature, is more open-ended and exploratory, especially at the beginning.

This research involved both processes in a linear way. Deductive analysis was employed where theory from the literature was used to form the basis of the six factor framework. Subsequently, inductive analysis was employed to analyse the residual data, leading to identification of new categories.

Contrary to deductive coding where generalizations guide the framework, induction refers to the process of creating meaningful and consistent understandings, and/or theories by integrating the current knowledge gained from the literature, and focus group results. That is, the information was collected, categorised, and trends, themes, and patterns in the data were then identified.

An overview of the coding process is shown in Table 3.1 below. The intended outcome of the process is to create categories which in the coder's view captures the key aspects of the themes in the raw data and which are assessed to be the most important themes given the research objectives.

Table 3.2.
Overview of the coding process

Initially read through data	Identify specific segments of information	Label the segments of information to create categories	Reduce overlap and redundancy among the categories	Create a framework incorporating most important categories
Many pages of text	Many segments of text	30-40 categories	15-20 categories	8-12 categories

Adapted from Cresswell (2002), Figure 9.4

Some underlying assumptions for an inductive approach were:

1. The data analysis was determined by both the research objectives and multiple readings and interpretations of the raw data (inductive). Thus, the findings are derived from both the research objectives outlined by the researcher and findings arising directly from the analysis of the raw data.
2. The primary mode of analysis was the development of categories from the raw data into a framework that captured key themes and processes judged to be important by the researcher.
3. The research findings resulted from multiple interpretations made from the raw data by the researcher who categorises the data. Inevitably, the findings have been shaped by the assumptions and experiences of the researcher. In order for the findings to be useable, the researcher has made decisions about what is more important and less important in the data.

Inductive analysis enables patterns, themes, and categories of analysis to "emerge out of the data rather than being imposed on them prior to data collection and analysis" (Patton, 1990, p. 390). According to Dey (1993, p. 99), a natural creation of categories occurs with "the process of finding a focus for the analysis, and reading and annotating the data". These categories, while related to an appropriate analytic context, must also be rooted in relevant empirical material: "The analyst moves back and forth between the logical construction and the actual data in a search for meaningful patterns" (Patton, 1990, p. 411). The meaning of a category is "bound up on the one hand with the bits of data to which it is assigned, and on the other hand with the ideas it expresses" (Dey, 1993, p. 102).

According to Bruner, Goodnow, and Austin (1972, p. 16), "to categorize is to render discriminably different things equivalent, to group the objects and events and people around us into classes, and to respond to them in terms of their class membership rather than their uniqueness". The act of categorizing enables us to reduce the complexity of the environment, and allow for ordering and relating classes of events. At the perceptual level, categorizing consists of the process of

identification, "a 'fit' between the properties of a stimulus input and the specifications of a category. An object of a certain color, size, shape, and texture is seen as an apple" (Bruner, et al., 1972, p. 176).

Categories, created when a researcher groups or clusters the data, become the basis for the organization and conceptualization of that data (Dey, 1993). "Categorizing is therefore a crucial element in the process of analysis" (Dey, 1993, p. 112). Content analysis, or analyzing the content of focus group interviews, is the process of identifying and categorizing the primary themes or patterns in the data (Patton, 1990). "The qualitative analyst's effort at uncovering patterns, themes, and categories is a creative process that requires making carefully considered judgments about what is really significant and meaningful in the data" (Patton, 1990, p. 406).

According to Lincoln and Guba (1985, p. 347), the essential task of categorizing is to bring together into temporary categories those data bits that apparently relate to the same content. It is then important to "devise rules that describe category properties and that can, ultimately, be used to justify the inclusion of each data bit that remains assigned to the category as well as to provide a basis for later tests of replicability" .

The researcher must also render the category set internally consistent. Categories must be meaningful both internally, in relation to the data understood in context, and externally, in relation to the data understood through comparison (Dey, 1993). When a particular category is adopted, a comparison is already implied. The process of constant comparison "stimulates thought that leads to both descriptive and explanatory categories" (Lincoln & Guba, 1985, p. 341).

In the reporting of the results, each category has three key features.

1. *Label of category*: A word or short phrase used to refer to category. The label carries inherent meaning that reflects the specific feature of the category.

2. *Description of the category*: Description of the meaning of category including key characteristics, scope, and limitations.
3. *Text or data associated with category*: Examples of text categorising that illustrate meanings, associations, and perspectives associated with the category.

Merriam (1988, p. 141) writes, "thinking about one's data theorising is a step toward developing theory that explains some aspect of educational practice and allows one to draw inferences about that activity". Further, Taylor and Bogdan (1984, p. 139) state that the goal of data analysis is to "come up with reasonable conclusions and generalisations based on a preponderance of the data". Speculation then is the key component to contributing to theory in a qualitative study.

The analysis and interpretation of research data in this study sought to explain and describe the nature and variety of issues confronting retention, within the indigenous tertiary institution of Te Wānanga o Aotearoa. The analytic categories were developed in two ways. First, the categorisations were defined deductively through the literature review. The literature revealed a number of barriers to adult students, including indigenous participation and retention in tertiary education. Consequently, the implications of the literature review were also considered when the analytical categorisations were established.

Second, the completed focus group data were examined and analysed, and from this initial raw information four of the existing themes or categorisations were confirmed (*kaiako (teacher) characteristics, whānau (family) features, integration processes and institutional climate, employment and financial factors*). Two categories were eliminated (*sense of belonging and social networks (social integration), and educational experience*), and two categories (*student motivation, and pre-enrolment and induction processes*) were identified as emergent themes and included in the framework for the next research phase.

In the qualitative data analysis, quotes were clustered together based on their similarity and separated from each other according to their incongruity. From the groupings of quotes, elemental meanings were extracted and criteria for each group established. In this way, both deductive and inductive processes were applied.

The form of analysis for this study was a qualitative one initially, moving into a quantitative interpretation. So, the findings should not be treated as conclusive, but rather as a reflection of a perceived cultural situation that warrants further investigation. As Denzin and Lincoln (1994, p. 15) note, when interpretations are arrived at, it is important to remember that "there is no interpretive truth...there are multiple interpretive communities".

The key constructs identified from analysis of the focus group interview data are presented in the following chapter.

Phase Two - Quantitative investigation

The second phase of this study was the three stage quantitative investigation. Stage One was a pilot study to elicit data to refine the instrument. Stage Two used the Rasch Model program RUMM2020 (RUMM Laboratories Pty Ltd, 2007) to analyse data from the research sample. Stage Three used parametric analysis of calibrated data from Stage Two to examine associations between variables.

Stage One: Pilot study

Conceptual framework

A questionnaire was used since questionnaires are ideally suited to measuring people's attitudes and opinions, and are also useful for collecting data from a large number of respondents. Through the use of the questionnaire, information was gathered to quantify the factors that influence the decisions of

Māori students, and adult students in general to persist with, or withdraw from, their tertiary education within the context of an indigenous tertiary institution.

The task of developing the questionnaire included:

1. Determining the questions;
2. Drafting the questionnaire items;
3. Sequencing the questions;
4. Designing the questionnaire;
5. Revising the instrument; and
6. Developing a strategy for data collection and analysis.

In order to create a scale that measures a variable in accord with the theoretical requirements for measurement, Wright and Masters (1981) identified seven measurement criteria:

1. Each item should be evaluated to see whether it functions as intended;
2. The relative position (difficulty) of each valid item along the scale that is the same for all persons should be estimated;
3. Each person's responses should be evaluated to check that they form a valid response pattern;
4. Each person's relative score (attitude or achievement) on the scale should be estimated;
5. Each person's scores and the item scores must fit together on a common scale defined by the items and they must share a constant interval from one end of the scale to the other so that their numerical values mark off the scale in a linear way;
6. The numerical values should be accompanied by standard errors which indicate the precision of the measurements on the scale; and
7. The items should remain similar in their function and meaning from person to person and group to group so that they are seen as stable and useful measures.

Instrument development

The key constructs from the qualitative phase comprised the preliminary theoretical framework for instrument development. However, the analysis of the qualitative data did not overtly identify the attributes of a retained learner. Therefore, an additional element of *student retention attitudes and behaviours* was derived from a re-analysis of the qualitative data. This element was assumed to characterise an adult student, including Māori with the capacity to complete a course of study at an indigenous tertiary institution (i.e. to be retained). That is, a student with high capacity to be retained was expected to display a high level of this element whereas a student with low capacity for retention was expected to display lower levels of this element. This element would also be the dependent variable in Stage Three of this phase.

A self-report questionnaire was constructed with a set of items on this variable as well as on sets of items that would indicate the independent variables in Stage Three. These sets of items were scales in their own right since each was designed to measure a different variable.

The questions had to be easily interpreted and understood by the respondents who would complete the questionnaire (Moser & Kalton, 1979; Oppenheim, 1992). Initial item writing was based on theoretical information and also from the findings of Phase One. The items were then revised and refined multiple times based on discussions and feedback from academics familiar with instrument development. For example the indicator *'I was prepared for tertiary study'* was re-written as *'I believed that I could cope at a tertiary level of study'*. Also questions that could not be easily interpreted, that were deemed redundant or repetitive were also identified. Such questions were deemed unsuitable for inclusion in the instrument and were deleted. For example, *'I understood what barriers I would have to contend with to complete my study'* was considered ambiguous and therefore was removed. At the completion of item writing, 72 items had been written.

Sample

The preliminary questionnaire was piloted with a small sample of ten students to ensure the statements were understandable and meaningful for the respondents and to make sure the questionnaire consistently measured what it was intended to measure, thus bringing reliability and validity to the study (Bryman, 2001; De Vaus, 2002; Wiseman, 1999).

The 72-item questionnaire was piloted with ten students' representative of the demographic profile of the population being investigated. Five had completed their course of study, and five had withdrawn during their study.

Administration

First, participants in the pilot were asked to comment on the wording, grammar, and clarity of each item. Second, the participants were asked to complete the questionnaire. These results were then analysed to look at the level of affirmativeness of participants.

Data Analysis

The aim of instrument development was to produce an instrument which would elicit student scores that were hierarchical and on an interval scale. That is, to ensure they had varying levels of difficulty (ranging from 'easy' to 'hard' to affirm), and so that only the students with the highest scores would be affirming the most difficult items. The data were recorded and manipulated in an Excel spreadsheet.

The participants were ranked in order of their scores – from highest score to lowest after aggregated scores were calculated. The items were then sorted by scores according to the responses - highest scoring item at the top. A pattern in the spreadsheet was evident. The most affirmative people – those who chose the higher response categories more often tended to affirm the most difficult items. A range of person scores and similarly a range of item difficulties were evident and

the higher person scores were associated with affirmation of the most difficult items. This was a Guttman (1950) pattern.

However, the pilot study also showed that some items were not differentiating between course completers and non-completers. These items required re-writing or deletion. For example, *'my teacher was very student centred in their approach to teaching'* was rewritten to read *'my teacher's delivery style helped me to achieve'*. Other items were removed all together as their data did not fit the Guttman pattern e.g., *'I wanted to study so I could work with Māori people in particular'*, and *'I had support from whānau'*.

The 72-item questionnaire following piloting refinement is presented in Appendix F.

Stage Two: Rasch Model application and analyses

Instrument

The instrument comprised 72-items intended to measure seven retention variables. The variables and number of items in each scale are detailed in Table 3.2 below.

Table 3.3.
Scales and scale sizes

Variable	Scale size
Student retention attitude and behaviour	36
Kaiako (teacher) characteristics	10
Whānau (family) features	7
Integration processes and institutional culture	5
Employment and financial situation	5
Student motivation	5
Pre-enrolment and induction processes	4

Items were responded to on a four-point Likert scale consisting of Strongly Disagree, Disagree, Agree, and Strongly Agree, with No Comment included as a fifth category for respondents not wishing to or unable to respond to a particular item.

Also included in the instrument were four demographic questions. These elicited information on gender, age, ethnicity and employment profile. This information was required to describe the sample and the data on ethnicity (Maori or non-Maori) for examining the association between this and other retention variables.

Sample

The sample was 1500 students who were over 25 years old, and were students with Te Wānanga o Aotearoa in 2007. This included those who were retained, along with those who withdrew at some stage during their study.

Administration

The participants were mailed the 72-item questionnaire along with a prepaid return envelope. Also, a covering letter and information sheet (see Appendix E) were included. Postal questionnaire administration was used because of the potentially large number of respondents who were spread over a wide geographical area. Participation was voluntary and 165 completed questionnaires were returned.

Data Analysis

Data were scored on a four point scale: 4= Strongly agree, 3= Agree, 2= Disagree, and 1= Strongly disagree with no comment and missing data recorded as '9'. Demographic data were coded and entered numerically. For example, Females were entered as '1' and Males as '2'. Data were recorded in an Excel spreadsheet as in Stage Two with the addition of the categorical variable data.

Data from the seven variables were analysed separately. The analysis of data using RUMM2020 estimated a variety of fit statistics. The meaning of the Summary Test-of Fit Statistics and Individual item Fit Statistic are explained when the data are presented in Chapter Five. RUMM2020 also generates graphical

displays such as the Person-item Threshold Distribution and the meaning of these displays are also explained when the displays are presented. Additionally, RUMM2020 uses the Rasch Model to calibrate the student scores against the difficulty of items to produce student locations measured in logits. These were also estimated since they were required in the third stage of data analysis.

One of the underlying assumptions in rating scale instruments is that the respondents will be logical in their choice of the response categories. That is, the students with the most affirmative views could be expected to choose the more 'difficult' categories. For example, selecting 'strongly agree' whereas students with less affirmative views would be more likely to select 'disagree' category. Testing for this entails estimation of thresholds and checking the order of these thresholds. The threshold values reflect the item difficulty of each item. According to Bond and Fox (2001, p. 234), a threshold is "the level at which the likelihood of failure to endorse a given response category (below the threshold) turns into a likelihood of endorsing the category (above the threshold)". Therefore, a threshold is the point on a scale at which a respondent has an equal probability of endorsing either of two adjacent response categories. These are the points at which a person has an equal probability of selecting a response category or any of those above that level. For example, in the case of four response categories, there are three thresholds that mark the boundaries between the four response categories: SD (Strongly disagree), D (Disagree), A (Agree), SA (Strongly agree), and all should be ordered. RUMM2020 displays thresholds for an item by generating Category Probability Curves. These plot the probability of a response category being chosen against person location (measure of affirmativeness). The intersection of two curves indicates the threshold as a coordinate on the person location axis. For example, the Category Probability Curve for Item 12 presented in Figure 3.1. The intersection of the '0' and '1' curves occurs at -2.9 logits while the intersection of the '1' and '2' curves is at -1.0 logits. That is, the intersection between 'strongly disagree' and 'disagree' curves is at a lower person location than that of the 'disagree' and 'agree' curves. When this pattern is replicated for all the curves, the item is said to have data with ordered thresholds. This can be contrasted with Category Probability Curve for

Item 3 presented in Figure 3.2. In this case, the threshold between the '0' and '1' curves is -0.8 logits and the threshold between the '1' and '2' is -2.6 logits. These thresholds are disordered.

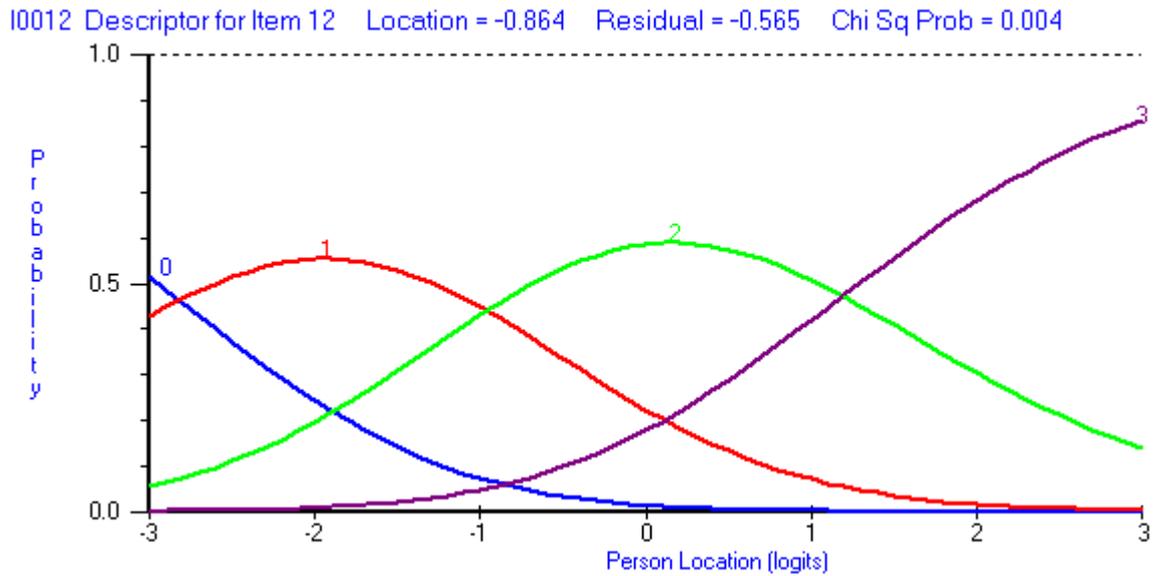


Figure 3.1. Category probability curve for Item 12

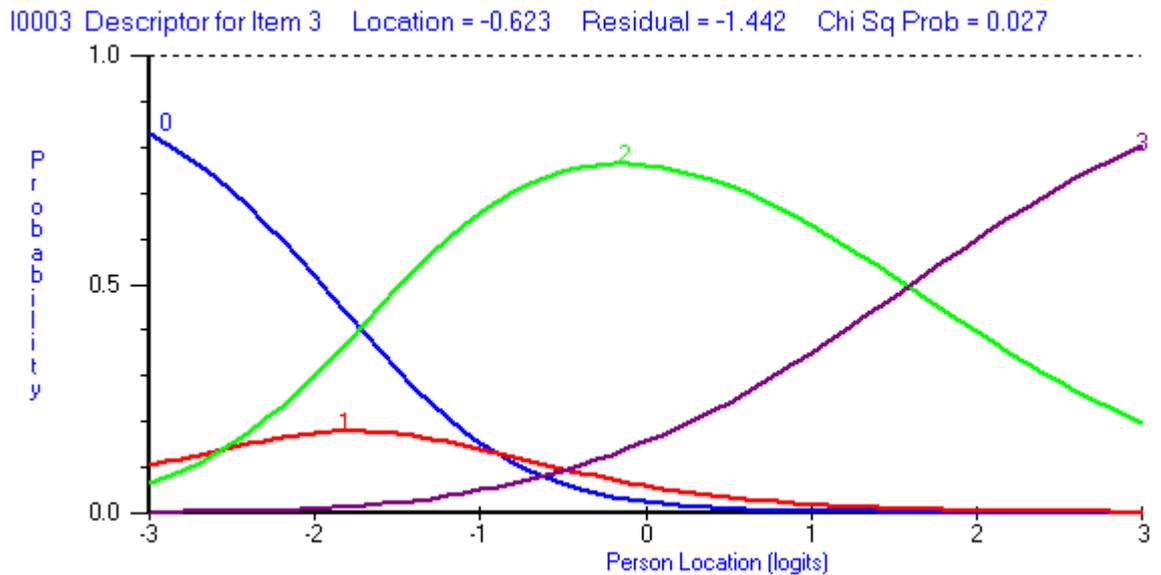


Figure 3.2. Category probability curve, Item 3

This category probability curve shows that Item 3 has disordered thresholds, therefore data on the item does not fit the model. To make this item fit the model,

response categories '1' and '2' were collapsed. Following this, the data fit the model well as demonstrated in Figure 3.3 over page.

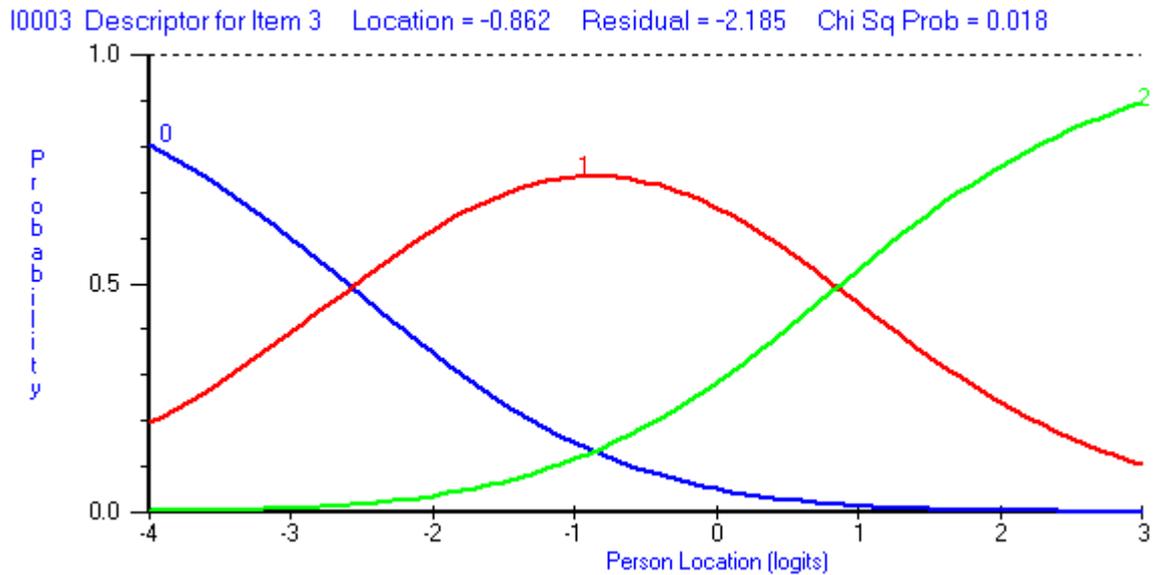


Figure 3.3. Category probability curve, Item 3

In conclusion, the RUMM2020 analyses assisted in constructing interval level scales that were used to produce calibrated scores for the students. These calibrated scores were then the input data for Stage Three analyses.

Stage Three: Parametric analyses of associations between variables

Multiple regression analysis

Theory

Multiple regression is appropriate for research questions where the relationship between two or more independent variables and one dependent variable is of interest. The general purpose of multiple regression is to learn more about the relationship between several independent and a dependent variable. The process allows the researcher to make predictions of the dependent variable based on several independent variables (i.e. it is a statistical technique that allows the

prediction of someone's score on one variable on the basis of their scores on several other variables). Therefore, if two variables are correlated then knowing the score on one variable will allow the prediction of the score on the other variable. The stronger the correlation, the closer the scores will fall to the regression line and therefore the more accurate the prediction. When using multiple regression, many researchers use the term independent variables to identify those variables that they think will influence some other dependent variable. This study is interested in predicting student retention *attitudes and behaviours* (dependent variable) from measures of six independent variables (i.e. *kaiako (teacher) characteristics, whānau (family) factors, integration processes and institutional climate, employment and financial factors, motivation, and pre-enrolment and induction processes*). As human behaviour is inherently 'noisy', it is not possible to produce totally accurate predictions, but multiple regression allows us to identify a set of predictor variables which together provide a useful estimate of a participant's likely score on the dependent variable.

The meaning of the statistics

The independent variables were regressed step-wise against the dependent variable. Confirmation of a relationship required a level of probability less than 0.01 that the relationship was due to random fluctuations in the data. The nature of the relationship (direct or inverse) was indicated by the respective positive or negative value of the slope coefficient (B) and the effect of variation in the independent variables upon variation in dependent variable (strength of association) was calculated for each relationship. Beta weight (β) was calculated to provide a standardised measure of the strength of association between each of the six independent variables and the dependent variable. The cumulative effect of variation in the independent variables on the dependent variable was measured by calculating R Square.

Data

The data on the dependent and independent variables were person location logits (calibrated scores) that were generated by the seven RUMM analyses. These calibrated scores (logits) for each student were the interval data entered into SPSS (SPSS Inc., 2008).

Model and analysis

The model tested by multiple regression analysis specified *student retention attitudes and behaviours* as the dependent variable with six variables specified as independent variables – *kaiako (teacher) characteristics; whānau (family) features; integration processes and institutional climate; employment and financial situation; student motivation; and pre-enrolment and induction processes*. SPSS (SPSS Inc., 2008) was used to conduct the analysis.

Analysis of variance

Theory

In general, the purpose of analysis of variance (ANOVA) is to test for significant differences between means (for groups or variables) for statistical significance. This is accomplished by analyzing the variance, that is, by partitioning the total variance into the component that is due to true random error (i.e. within-group *SS*) and the components that are due to differences between means. These latter variance components are then tested for statistical significance, and, if significant, the null hypothesis of no differences between means is rejected, and the alternative hypothesis that the means (in the population) are different from each other is accepted. The dependent variables are measured and the variables that are manipulated or controlled are the independent variables.

ANOVA also has some assumptions. As a one-way ANOVA is a pragmatic test it shares similar assumptions to a *t*-test. These are that the dependent variable has been measured on an interval scale, that the variances of the groups based on

the levels of the independent variable are equal and that the distribution of scores in each group does not significantly deviate from normal.

One way ANOVAs are employed is to address research questions that focus on the difference in the means of one dependent variable and one independent variable with two or more levels. In a one-way ANOVA the null hypothesis that is tested predicts that the means of the dependent variable scores for each level of the independent variable will not be significantly different. To test the null hypothesis multiple *t*-tests could be employed as when there are more than two means it is possible to compare each mean with each other mean using *t*-tests. However, carrying out multiple *t*-tests would involve reanalysing the same data multiple times and this can lead to severe inflation of the Type I error rate, that is, the null hypothesis is rejected when it is in fact true. Analysis of variance can be used to test differences among several means for significance without increasing the Type I error rate.

In addition the effect sizes were estimated by calculating the Eta squared statistic (η^2). This shows the proportion of variance in the dependent variable accounted for by the independent variable.

Meaning of statistics

The association between adult student ethnicity (Māori/non-Māori) and the seven variables was examined by conducting one-way analysis of variance using SPSS. The data for the seven variables were interval and that for student ethnicity were dichotomous. SPSS estimated the F statistic and its significance. When Sig.<0.05, the hypothesis that the scores are equal for the two 'classes' of ethnicity should be rejected.

In effect size estimation, values for η^2 less than 0.20 evidence a weak association (Creswell, 2002).

Data sources

The data for the seven variables were interval and were the person locations from the RUMM2020 analyses of the seven scales. The data for student ethnicity were dichotomous.

Ethical considerations

Research involving humans should always comply with current ethical standards. This research was approved by the Human Research Ethics Committee (HREC) of Curtin University, and the Ethics Board of Te Wānanga o Aotearoa. Factors within the ethics proposals accepted by these institutions covered the following key ethical issues.

Informed consent

All participants were asked for their informed consent (David & Sutton, 2004). This means that all the pertinent processes used to gather and analyze the data, and to present the findings generated were clearly and accurately described prior to written consent being sought. All participants were volunteers and had the right to withdraw from the study at their discretion (Nardi, 2003). Consideration was given to the participants and the questionnaires took 30 minutes or less to complete.

Anonymity and confidentiality

This was guaranteed to students as they will be coded as numeric values so as to remove identifying features from the data during data preparation and entry. No participant was identified in the study or in the reporting of the study (Bryman, 2001; David & Sutton, 2004). Access to data gathered was only be available to the researcher and supervisor.

Feedback and reporting

Prompt and useful feedback was given to all participants. Accuracy was addressed through considering the potential for misinterpretation of the findings and conclusions, and every effort was made to make sure this was minimized.

Compensation

Culturally appropriate compensation for participating was also offered in the initial information sheet to align with cultural process. Kai (food) was included in the process as it has cultural fit. Kai (food) is an important part of Māori culture. It signifies unity, wellness and is a neutralising method used to conclude a process. Hence, kai (food) was included in this process to bring closure to the focus group and indicate that the comments and dialogue remain in the space used, and are not taken out into the world outside the room (i.e. to ensure confidentiality). This process was included in the ethics proposal for Curtin University of Technology and Te Wānanga o Aotearoa who reviewed the original research proposal and granted approval for the research to proceed.

Storage

The hard copies of both qualitative and quantitative data are held in a secure, locked storage at Te Wānanga o Aotearoa, Head Office. These data will be retained for a period of five years. Wave files of the focus group recordings, along with data collected for data entry were stored on computer while analyses were completed. The data files will be maintained electronically with password protection for five years, after which they will be destroyed. This is recommended in case of secondary analysis (Bryman, 2001). Questionnaires developed for the study and completed by the participants will also be destroyed in five years time. All data collected will remain confidential and anonymous by removing any identifying information (Bryman, 2001; David & Sutton, 2004).

Alignment of data collection/data analyses with research questions

The following Table shows how the research questions, the data and the data analyses were connected.

Table 3.4.
Research question and data analyses

Research question	Data	Data analysis
Can measurement scales be constructed to measure student retention attitudes and behaviours and also the factors which influence these?	Data from administration of the 72-item rating scale instrument.	RUMM2020 fit statistics
How do the item difficulties as measured in logits qualify the nature of retention variables?	Data from administration of the 72-item rating scale instrument.	RUMM2020 individual item difficulty locations
What are the influences on the student retention attitudes and behaviours of adult students, including indigenous within an indigenous tertiary institution?	Calibrated student scores on the seven variables	SPSS multiple regression analysis with student retention attitudes and behaviours as dependent variable
Are there differences in student retention attitudes and behaviours that are attributable to a student being Māori or non-Māori?	Calibrated student scores on retention attitudes and behaviours	Analysis of variance with independent variable student ethnicity
Are there differences in personal, institutional, social, and environmental factors postulated to influence student retention attitudes and behaviours that are attributable to a student being Maori or non-Māori?	Calibrated student scores on the seven variables	Analysis of variance with independent variable student ethnicity

Summary

This chapter presented the research methodology applied in the study. An explanation of the research approach and research objectives of the study was then presented. It also described the data analysis procedures, as well as the participants and overall design of the first (qualitative) phase. This was then followed by a similar explanation of the second phase of the study, that is, the quantitative phase that was comprised of three distinct stages of data collection and analysis. The results of the qualitative investigation will be discussed in Chapter Four while Chapter Five will present the results of the quantitative stages.

**Nāu te rourou nāku te rourou,
ka ora te iwi.**

By your basket of knowledge and my basket of knowledge,
the iwi will grow.

CHAPTER FOUR

QUALITATIVE PHASE: RESULTS AND DISCUSSION

Overview

This chapter presents and discusses the results of the qualitative phase of the research. This phase utilised the focus group interview (hui) methodology to collect textual data from eight respondents. In line with the research questions, this phase of the research identified factors impacting on the retention of Māori students, and adult students in general in tertiary education. As part of the overall research design, the findings of this phase informed the development of the rating scale instrument in the quantitative phase.

Participants

The interviews conducted provided data from adult students including Māori. These interviews involved students who were retained, and others who did not complete their programme. In some instances, the findings from the focus group are surprising and contrast with the factors and barriers identified in the retention literature. The use of the focus group technique also communicates the view that hindsight and reflection are powerful tools for the analysis of factors that affect students in tertiary education.

Organisation of results and discussion

Analysis of the literature indicated factors that possibly contribute to retention of adult students, including Māori at a tertiary level. The literature on these students in New Zealand, Australia and the USA often reports similar reasons for leaving tertiary education. These reasons or factors influencing retention were used to construct the interview schedule (see Appendix C). They were – 1. *kaiako*

(teacher) characteristics, 2. whānau (family) features, 3. integration processes and insitutional climate, 4. employment and financial situation, 5. sense of belonging and social networks (social integration), and 6. prior educational experience. The following presentation and discussion of the findings from the interviews are structured on these six factors, and also on an understanding that a new conceptual model will be synthesised after consideration of these findings. In support of the discussion, direct quotations from the eight participants are printed in quotation marks. Privacy requirements and other issues do not permit attachment of names to their comments, which are taken verbatim from transcripts of their responses.

1. Kaiako (teacher) characteristics

In his 1993 study, Astin identified that teaching with a student orientation had more effect on student outcomes than almost any other environmental variable. Student-oriented teachers respect students, are approachable, are interested in the subject, well organized, use appropriate assessment, are fair and unbiased, are culturally sensitive, are caring and are motivational (Baker & Pomerantz, 2000-1; Braxton, et al., 1995; Lizzio, Wilson, & Simons, 2002). Nevertheless, the recurrent issue for the adult students, including Māori was the emphasis placed on teaching and teacher-student interaction. These were perceived as both enabling and inhibiting. Of the participants who had withdrawn, most gave teaching quality as a major reason.

F: The teacher was not interested in teaching us, they just delivered and left, real lecture style. They weren't interested in seeing if we 'got it' or not.

Over half of the participants who were retained supported the proposition that teacher support was important in continuing commitment to their studies.

B: My teacher was what got me through; she got me through the course. I think if I didn't have such a great teacher I would have failed or dropped out.

Sound relationships between a teacher and student are pivotal to student engagement in the learning process. A key finding from this research is that unequal power relationships (Bishop & Glynn, 1999) inhibit student success.

E: Discrimination by a tutor made it difficult for me to participate in class, or to ask questions.

F: My teacher was pretty intimidating, and a bit of a 'know-it-all'.

However, positive teacher–student relationships can serve to encourage retention and success.

D: The tutors ... were interested and developed relationships with students.

H: Our kaiako had fun with us, and it really helped my learning. We all appreciated the different way of teaching our kaiako had. It made a nice change from the school style that I had had in the past.

These comments indicate these kaiako (teachers) were approachable and tolerant of student stresses and needs. Thus, the establishment of positive, reciprocal relationships between students and teachers is fundamental for students to develop self efficacy and subsequent success.

As Abbott-Chapman and Edwards (1998), Hall et al., (2001) and Promnitz and Germain (1996) note, caring relationships are pivotal to student success. Students respond to teachers who see the person, not the ethnicity or age. One participant in this study exemplified this point.

A: The tutor gave good support and understanding of the ways Māori learn.

A recurring theme throughout the focus group data from participants was that retention improves where students have regular and meaningful contact with teachers, both inside and outside the classroom. Two themes were evident from the focus group dialogue to support this proposition. The first highlights the importance of teachers nurturing students and establishing a relationship with their

students (Padilla, Trevino, & Gonzalez, 1997; Saenz, Marcoulides, Junn, & Young, 1999; Walker, 2000).

G: I liked the learning environment created at Te Wānanga o Aotearoa, and like the close relationship I had with my kaiako. I have not experienced this at school or other educational institutions.

The second suggests that teachers have a mentoring role away from their teaching, including matters of pastoral care (Jonides & Gregerman, 1996; Wolfe, 1996).

H: The kaiako took great care of us in the class. They told us how to access support and always were available to talk about personal stuff that affected class work. The kaiako was really holistic in the way they approached teaching, and understood that sometimes our stuff outside class affected us in class.

Participants indicated that quality teaching respects students, is fair and unbiased, culturally sensitive, caring and motivational. Contact with the teacher needs to be regular, sustained and positive. Teaching methods need to suit students' levels of independence.

The ability of the teacher to teach, and develop a connection with students as highlighted previously is relevant. The focus group participants stated that this connectedness has a major influence on whether students remain engaged in education with Te Wānanga o Aotearoa.

A: We all got on so well with our kaiako; we wanted them to teach us the next year too. They were very supportive and guided us through, from start to finish. They really cared. It was nice.

Within this theme was the matter of staff qualifications and experience for teaching the material or course. Participants who had withdrawn stated initially that their withdrawal was to do with the kaiako, but when supplementary questions were asked, it was established that they had minimal confidence in the kaiako (teachers) ability to teach, or their knowledge of what was being taught.

C: I had no confidence that my teacher knew what they were talking about.

F: I found out that my tutor was not qualified in the subject area they were teaching.

This finding may be of consequence for the institution. In terms of staff qualifications and experience may affect the students' perception of their kaiako (teacher) and their ability to connect with their kaiako (teacher). As previously highlighted, if a positive relationship between the student and teacher is established, the probability of that student being retained is increased. Therefore, a student needs to be comfortable with a kaiako (teachers) level of credentials and experience in order to positively affect retention.

Review

This section has outlined the results of analyses of the qualitative data in relation to *kaiako (teacher) characteristics*, and the effect on retention. The data show that kaiako are indeed an important factor when discussing matters relating to retention.

2. Whānau (family) features

Māori, like many indigneous peoples, have a very strong family or whānau (family) orientation. There is evidence that traditional values associated with whānau (family) have become less important with urban drift and a history of integration policies in New Zealand's past. However, Māori continue to hold on to many of the traditional whānau (family) values including the responsibilities associated with looking after other whānau (family) members. Māori are also over-represented in some of the more distressing statistics with regard to whānau (family) - sole parent and teenage pregnancy rates in particular. Adult students often have more acute whānau (family) responsibilities and commitments than traditional students which can negatively impact on the formers' ability to be retained (Risquez, Moore, & Morley, 2007-8).

Several respondents in the focus group recounted the expectation placed on them to stay home and look after other children in the family, cousins or other relatives, or grandparents. The responsibility of looking after younger siblings falls almost exclusively on female respondents. Although not often understood explicitly,

it appears that the values associated with tuakana (oldest) and teina (youngest) are still important within the families of these participants.

F: I come from a very big family and I was brought up by a grandmother but my mother got me back in my teen years because she thought I was spoilt, and that happened to be my college years. To me those were traumatic years because I had to get to know somebody who I've always known was my mother, and that, combined with puberty - it just didn't work. I lived for the day to just go out and make money, even though my teachers were wanting me to sit School C and hang in there, I just couldn't handle all the tamariki [children], helping to feed them and clothe them, clean house and go to school. I never did an ounce of homework in all my college years.

E: When I started my study, my parents started to look after the moko's [grandchildren] and then Mum got sick. And probably the way I was brought up, I don't know, but because I was the oldest I felt obligated to stay and help them out. So I stopped going to class.

The effect on retention of positive and negative relationships with parents, partners, and children was confirmed through the focus group interviews. While it is not an important new insight into retention, it is accepted that relationships are a key factor in explaining retention. This is because the adult education literature is supportive of the notion that relationships and collaborative learning climates are important in learning. The notion of relationships as a retention factor is particularly pertinent in Te Wānanga o Aotearoa with its adult and Māori population. The data are consistent with the answer to a rhetorical question often asked by Māori – “what is the most important thing in the world?” is answered with “he tangata, he tangata, he tangata – it is people, it is people, it is people”.

Positive relationships with classmates, employers and whānau (family) also served as a support factor to student success in this study. The notion of positive power sharing relationships (Bishop & Glynn, 1999; J. Hill & Hawk, 2000) is a prerequisite to Māori student retention and success as the following participants commented:

G: I received wonderful help and support from my family who I know was dedicated to helping me achieve my goals.

This study also showed that students are likely to consult with friends and whānau (family) for advice about withdrawal. The concern is that whānau (family) members are often ill-equipped to provide counsel about retention decisions.

F: When I was thinking of dropping out my whānau didn't care if I did or not. They didn't understand the pressure I was under. They just thought that it might be best if I went to work to bring in some money. They didn't get it really.

A factor impacting on retention is the level of social support they have from family, friends, and peers (West, Hore, Benine, Browne, & Kermond, 1987).

G: My family wouldn't let me quit. They all rallied around to make sure that I had no excuse to quit.

The focus group information showed that respondents who had withdrawn also recounted very poor attendance which was often linked to whānau (family) commitments requiring them to be away from classes. Whānau (family) responsibilities are a very powerful Māori social norm and the greatest requirements seem to be placed on middle aged adults. These whānau (family) commitments were also evident in non-indigenous participants, but it was indicated by the members of the focus group that this whānau (family) expectation may affect Māori to a much greater degree than non-indigenous people. There is also evidence to suggest that these whānau (family) responsibilities affect females more often than males.

E: It took me two years to pass my first course, and, in the meantime, one of our family members died and she had two small children which I took responsibility for. And, trying to bring up a new born baby, which happened to be three months premature, and studying, and doing all the other things that you're supposed to do as a Māori student, it was a bit hard.

These experiences often led to difficulties for these students beyond those created by poor attendance. Several talked about wanting to leave school as much to get away from their home environment as to leave school itself. Others talked about really liking school because it gave them an escape from the negative experiences happening in their homes.

F: I loved school even though I struggled through it. I really loved school but I think it might have been because for the wrong things, reasons because I wanted to get away from home.

The wider whānau (family) and, in some cases the hapū (extended family/community), also played a role in terms of the expectations related to retention felt by Māori students.

B: Well I don't think I had any personal goals. It's just, my whole family, there was the expectation that I would go to a university. And, because it was that family buzz to have one person at university and I just happened to be right there.

Right you were the chosen one? So really that goal became your goal?

Oh, try and fight with your parents, grandparents. I was going to uni and that was it. And I was gonna complete too...I had no choice.

Several members of the focus group, when asked "What do you think will help you achieve your goals?" mentioned the need to have support from whānau (family).

B: Education, support from parents.

G: Support from whānau [family], friends and teachers.

A: A lot of whānau [family] support, high marks and a good attitude towards life.

Whānau (family) expectations and lack of encouragement, in some instances, caused considerable damage to the self esteem of focus group participants.

E: Oh yeah. My husband thought I was dumb. Oh, well maybe he was right, but...

Did he?

Yeah, he constantly said I was dumb.

Did he? So was there a lot of friction between you and your husband?

Oh definitely.

What did your husband want you to do?

Stay home and look after the children and the Marae [meeting house].

So that was it?

Yeah, he didn't want me to study. It pissed him off

So you stopped?

Yip, I left.

C: All the negatives were at home. No support from the old man [husband]. He didn't want me to go to school. He wanted us to go to work and make some money to help to feed the family. Education wasn't the thing for him.

E: It made balancing things like my Māoritanga, a bit difficult at home. My husband [non Māori] didn't like me taking time off classes for 'Māori stuff' so I tended to miss quite a few tangihanga. I wasn't allowed to go anywhere. I had to pass.

Several participants recounted the major impact their partners had in either preventing them from enrolling in further studies or conversely raising their educational expectations for themselves and their children:

F: But um, I met a guy.

Met a guy, met a guy and what did he do?

Um, did nothing but I told him I wanted to do it but he didn't really want me to go so I decided not to.

Oh, did you start a relationship with this guy?

Yeah.

And he was the reason why you didn't go?

Yeah.

A: My wife really wanted me to get a job and a tohu [qualification]. She encouraged me to attend class and supported me so I couldn't drop out.

With regard to familiar role models, about half of the participants noted a complete absence of role models in the family.

H: *Have any members of your whānau [family] been involved in tertiary education or study?*

Is that uni?

Yes, that is university, teachers college or polytech[nic].

No.

B: I was expected by my family to go to Uni[versity], 'cause I was 'the bright one'. It was always going to be that way. I rebelled for the first few years, then gave in and was really determined to succeed. I guess the expectations helped form that determination.

D: I went to the Wa [Te Wānanga o Aotearoa] because my husband, he was brought up in a very educational sort of a family - he had a high focus. They don't have a big family, their parents were that way inclined. The importance for them was in education, whereas with me, I was brought up the oldest of nine kids and we didn't have that focus in our life and so, probably, just through the marriage and living with him and, you know, and like his sort of academic feats, I suppose.

The literature has identified that the lack of role models is a significant barrier to success in tertiary education (Jefferies, 1997). The issue of a lack of role models is linked to the issue of expectations.

F: Nothing else was thought about which in a way makes me sad because I feel that no other option was given to me and perhaps I may have taken a different option and that perhaps I wouldn't have sunk so badly.

Review

This section has outlined how the factor of *whānau (family) features* that may have an impact on a student's ability to remain in tertiary study. There are many aspects of this factor that warrant future research. For example, collectively it is evident that the factor of *whānau (family)* does impact on retention. Data show that this impact can be either positive or negative.

3. Integration processes and institutional climate

The literature suggests that the first step in improving retention rates of indigenous students may be to create an educational environment in which the students want to remain. This includes placing value on indigenous cultures and other non-traditional students, and recognising their inherent validity and usefulness.

There is often a mismatch between students' expectations and the reality of university life (Abbott-Chapman, Hughes, & Wyld, 1992). It would appear that the person-environment fit is an important variable in terms of student retention as the compatibility between student and university is a primary contributor to retention (Tinto, 1993).

Support for Māori kaupapa based education was overwhelming amongst the focus group participants. The majority of participants indicated they would prefer to attend a Wānanga for all their study, but some were restricted by limited access or the limited types of programmes available. Many participants, usually without prompting, criticised the mainstream 'system' for failing to recognise the differing needs of Māori and adult students, and failing to provide courses and programmes which served those needs.

A study by Walker (2000) from the Curtin Indigenous Research Centre found that a key factor related to increased student retention was the importance to indigenous students of a learning environment supportive of indigenous values. Walker (2000) recognised that many institutions still have a long way to go in these matters, particularly with regard to curriculum and pedagogy. He also highlighted the many complex issues that do affect indigenous persistence, not only the poverty and ill health faced by many students as individuals, but also the effects on them of trauma within their communities. The report suggested that many students, who did not perform well academically, nevertheless were placed in an improved position with regard to gaining employment and contributing to their community because of their university experience.

A study by Central Queensland University into the culture of universities found that while universities state that they are committed to indigenous peoples' aspirations, the responsibility for enacting this commitment is invariably that of indigenous academics and indigenous support centres (MCEETYA, 2001). The study found that it is not sufficient that indigenous issues are addressed or responded to only when an indigenous person is present on the committee. For one thing, the size of indigenous staffing profiles is too small to accommodate this expectation. The study took the view that universities should have a commitment to ensuring that the ethos of the university is such that every decision-making body within the university ensures that implications for indigenous peoples are embedded in all their discussions and deliberations. Universities need to accommodate indigenous interests and rights across all facets of their operations – teaching, research,

administration, and community service. This requires more than cross-cultural awareness training, the incorporation of indigenous perspectives in the curriculum or the employment of indigenous educators.

Institutional commitment to students is identified in the literature as being critical to retention (McInnis, Hartley, Polesel, & Teese, 2000). Surveys of students withdrawing from courses suggests that those who feel isolated or disconnected from the institution are more likely to withdraw than those who feel connected to the institution and its occupants (Peel, 2000; Tinto, 1995; Tinto, Goodsell-Love, & Russo, 1993). The other issue highlighted by withdrawing students was the lack of interaction between students and lecturers outside of the classroom environment (Tinto, 1993). Students felt ignored by lecturers and discouraged from contacting them even about academic issues. With up to 14% of withdrawing students describing staff as uncaring and indifferent to the needs of the students there is a need for institutions to establish connections with enrolling students (Tinto, 1993).

Overwhelmingly, students in the focus groups said that they support the idea that student outcomes are enhanced when students are integrated into the institutional culture. They considered, for example, the degree of clarity and accessibility of information about the institution and programmes, the impact of enrolment processes, effectiveness of advice about course changes, the flexibility of timetabling and ease of early contact between institution and students.

G: I think the historically alien thing would be the worst, then the cultural thing, the racism and intimidation and then the money. I don't know if you'd stick Māori mentality at the bottom. I think that's the same as saying the institution is historically alien. Really, they're all huge stumbling blocks.

Participants suggested that the climate created within an institution impacts on student outcomes. As student diversity increases institutions must create climates that welcome, accept, respect, affirm and value diversity, creating 'an accepting culture' or 'ethos'.

Tertiary students arrive at an institution with particular cultural beliefs and values. Where this is not valued or accepted they are more likely to experience acculturative stress. Studies found that where institutional cultures are accepting of difference and facilitate a greater match with students' personal identity, higher rates of student retention and success are achieved (De Silva, 1993; Guider, 1991).

B: I love being at the Wānanga [o Aotearoa]. I wasn't in a minority, it was the norm to be Māori.

Some participants stated clear preferences about tertiary providers and programmes that met the needs of Māori. The responses were overwhelmingly in favour of this.

B: Yes. Now. I wouldn't have thought that at the beginning ... but now I'm over halfway through my degree I think I need to be in a Wānanga.

A: Yeah, definitely. Just because its run along Māori guidelines - same wavelength.

H: *Do you not see university as offering that to you now?*

No. They're still on a Pakeha [European] structure.

D: I like the cultural context, a Māori cultural context. I think you learn heaps, really learn in-depth content that you probably wouldn't get in a University.

E: Yes. Because it is a Māori Institution. It is a little bit more sensitive to the Māori side of things.

C: I would like to see, if Wānanga doesn't work for all Māori, that they still have those opportunities afforded to them. I see Wānanga working for me. That's the way I like to do things. I enjoy a communal way of learning.

Three participants in this group indicated that the institution's commitment to providing more flexible modes of study helped them stay involved in their study.

E: I only had class once a week for three hours, so I could fit my life around my study.

A: One weekend a month meant I could keep working and earn money to support my family as well as study.

However, the focus group participants suggested that perhaps Te Wānanga o Aotearoa was not as kaupapa Māori as it intended to be. This came about with comments around assessment.

A: It's a bit weird that we still have to do assessments and tests though, cause this is not how Māori studied under Wānanga in the old days. Your test was to put your knowledge into action, not down on paper. I think that Te Wānanga o Aotearoa has got caught up in having to prove stuff to the government, rather than do its own thing and follow the kaupapa path.

F: Yeah, I dropped out once the tests started coming, I hate tests. I really enjoyed the programme and the learning but I couldn't handle the anxiety of the tests, knowing that they were coming up. It just freaked me out and then I stopped going to class. So I reckon if they didn't have the tests and stuff, I would have gone all year.

C: Having exams and tests was pretty high pressure, and reminded me of school. I didn't like school and I didn't like being back in that environment. I loved the practical stuff, but not the class paperwork.

Further investigation is required into whether or not the government and 'mainstream education' are forcing such an environment, and the possible impacts of this on the retention.

Review

The data presented in this section shows that the aspect of *integration processes and institutional climate* are significant for the retention of Māori students and adult students in general.

4. Employment and financial factors

Literature shows that a growing number of students are experiencing financial problems and many students in paid work view this as essential or important for the continuation of their studies (King & Bannon, 2002). This was reflected within the focus group interviews by a majority of the participants. It was felt that even though a high number of courses at Te Wānanga o Aotearoa are free

of fees, students' lack of time to create income for their whānau (family) impacts on their financial position and therefore their ability to remain engaged in their course.

A: I loved going to class, but I couldn't work as well. It just would put too much pressure on me. So my family suffered a bit and made me think that study wasn't as important as working and earning cash.

Casual employment was significantly more important for those who had seriously considered withdrawal, compared to those who had not considered such an option. Students who had actually withdrawn from study ranked employment as an important factor influencing withdrawal. Losing a job or having insufficient funds from part-time work impacted significantly on their ability to remain engaged in education. Unless sufficient savings or other private income existed, the participants in the focus group relied heavily on part-time or casual employment.

One issue that arose while discussing this area of *employment and financial situations* was work in relation to the time spent on campus outside of class time. A high proportion of the focus group said that they were 'only occasionally' or 'never' on campus when not in class. These findings on changing student lifestyles have important implications not only for a multi-faceted approach to delivery of services, but also for on-campus service provision available for students.

Although students in the focus group claimed having a job did not affect their study progress, they stated that it did affect significantly the time they spent on campus. The more hours students spent in paid work, the fewer hours they spent on campus. In the focus group, students spoke of the stress created by the competing demands of study and work, and of having at times to go to work and risk being withdrawn from class due to absence. For example, one participant stated:

A: If you don't go when the boss wants you, you will lose the job.

Others spoke of falling asleep in class, and being overtired because they worked late at night or shift work. Typically work for the participants in this focus group was in the hospitality industry, fast food and retail.

When asked, “What do you think will help you to achieve your goals?” a large proportion of respondents recognised there would be cost implications.

G: If I have the finances to pay for my study, everything else should be okay.

F: Definitely money. Always money.

B: Good tohu [qualification], enough money, which would probably mean me having a part-time job.

H: Pass my assessments and more money.

A: Money will be the biggest problem. I can't think of anything else that would get in my way. I am pretty determined, but I can only control the money a little bit.

A large proportion of participants said cost had been a factor in their decision to do particular tertiary courses. Cost was also a determinant of subject choice as the course costs and length of certain programmes made them an unattractive option in relation to cost. Participants suggested that course selection was dictated by selecting a course that allowed them sufficient money left to live and support their whānau (family).

B: Definitely. The certificate was my second choice. I wanted to do a diploma but it was too expensive. I just can't afford that kind of money.

E: Yeah, the cost factor is a big thing 'cause, like, I've gotta stay working to support my family even though the courses at Te Wānanga o Aotearoa are free. But at the same time, it's almost impossible to work and study at the same time. I don't have hours at home where I can do it [study]. 'Cause I just got a busy life outside of work as well but also, um, what I'm trying to do at the moment is set out, set myself up next year so I can go back to [name of home town], do some extension modules there and do it through work. Not so much that they pay me to go but where they allow me to go and I still have a job.

A: It stopped me enrolling about three years ago. It was just too expensive. Not the cost of the course, but not being able to have a job, totally out of my range. I can do it now because the company I work for pays the fees and allow me study time off work which I get paid for.

F: The funding is all over the show. The system will pay you to stay home and watch TV but you can't get money to go and get an education. It's weird. At least on the dole I was getting money. So the incentive to study isn't very high. In fact I think it might make the money situation worse, so what's the incentive?

Historically, Māori whānau (families) have been larger than non-Māori whānau (families). Living with a limited income, having to provide for a large whānau (family), along with a strong sense of whānau (family) responsibility meant the best alternative for many Māori was to leave school and go out and get a job to help support the whānau (family). For some of the focus group participants, these factors negated continuing in tertiary education and/or going on to further study.

F: There was no support at home when it came to my education. Me and my husband found it financially difficult to raise five children on one income so I felt obligated to go and find a job, so I left my study.

About half of the focus group had taken out student loans to cover study and home costs while studying and only working part time or not at all. When asked about student loans, comments included:

C: It's just growing.

When asked whether the costs of courses had ever affected their decision to enrol in a course, participants said that it had not. Despite substantial debt burdens likely once their studies were complete, there was a pervading view from all participants that student loans provided the opportunity for them to enrol in a tertiary programme and they were doing their best to not concern themselves with the implications of the debt they were incurring. There was a strong sense amongst many of the loan recipients' responses that they saw the loan as a means towards the end of gaining a tertiary qualification.

A: When I started ..., it [the cost] blew me away but money is not going to get in the way.

B: Because I don't think about the cost, I just put it right at the back of my mind if I want to get my qualification. And once in a while I think about it. But basically I want it so badly I don't care about the cost.

G: It was the knowledge that funding was available that inspired me to get a move along. My age, and the access to funding, was part of the decision.

H: Not really, because it [course] was just something that I really wanted to do. In that case, costs don't figure into it.

Four participants indicated that they were taking the loans out on the hope that the qualification they gained while incurring the debt would guarantee them work in order to pay back the loan.

H: I went for a student loan and that was about \$1,500. I haven't paid that back yet. I'm planning on getting another one. That's how I'm living really, not thinking about the amount I owe, but going for my papers, hoping that's a guarantee that when I get my degree I can pay it back.

Two participants were concerned that the thought of a loan would still put a lot of Māori off attending tertiary education.

C: Even the thought of paying back a loan - some people don't want to have to pay back a loan. That'll stop people - the cost, the price. I reckon that would stop a lot of people, especially if they don't have any money, if they live pay to pay. They see the cost and they think "No, can't afford that" ... Especially when they're only used to seeing like \$400.00 a week in their bank - for the likes of factory workers, low income earners. They just see it as being not possible for them to get that kind of money, to pay it back.

For those in receipt of a loan, some ambivalence about student loans did emerge when other more general questions about barriers were asked. While respondents didn't necessarily see finances as a problem, they still had concerns about cost. When asked, "Do you have any other comments on adult participation in tertiary level education?" a large number of respondents noted cost as a major barrier.

G: I think the main ones are that the fees are too high; allowances have got to be allowances that are available, especially if you are a full-time student.

C: Student Loans are a pain. It's criminal because students should not be in debt when they finish their training.

A: Finding funding, you can always fall back on a loan although it's not a good way to start your life once you get your qualification. You will probably be paying it off for the rest of your life, but it's a lot better than not having a better job than what you are already in.

Perhaps, while they had been able to rationalise that cost would not present a barrier to themselves, they were still of the view that - at least in the wider sense - cost is still a major barrier for Māori.

The opinions and attitudes of respondents were focused on their goal, and they had decided to ignore the costs and the ramifications of paying back student loans. This strategy bears a somewhat fatalistic outlook - something Māori and other indigenous minorities have been noted for (Kaai-Oldman, 1988; Ogbu, 1987) but which is understandable considering the history of Māori participation and the existing climate for employment.

B: Because I don't think about the cost, I just put it right at the back of my mind if I want to get my Bachelor of Teaching. And once in a while, I think about it but basically I want it so badly I don't care about the cost.

A: Although student loans appear to have been a successful strategy in reducing the barrier of cost for Māori wanting to enrol in tertiary study, the loans will generate other difficulties for a greater proportion of Māori in the long term.

When asked to rank the different barriers, no one barrier was seen as pre-eminent across the participants. However, cost was a significant factor and several respondents ranked it as one of the top three significant barriers.

F: Worst problem would be finances and second would be feeling dumb and that's about it.

A: The highest would be the cost of study and living and paying for both at the same time.

In some instances, financial difficulties combined with the very strong sense of supporting the whānau (family) led to adult Māori making decisions ruling out continuing with tertiary education.

B: The financial side of it was concern for my grandmother because she had so many of us. I was in the first of two years then decided to finish, because of how many [whānau] she was responsible for. So I went back to go and support her.

F: Since I left, my main job has been to committing myself to the family I bore. For me that is very important in terms of their upbringing and their foundation. Giving them a firm base in their growing up, to face whatever there was that lay before them. I've done that.

Review

The issues surrounding *employment and financial situation* were shown to impact on a student's ability to be retained. However, data from the focus group interviews were inconclusive. Some felt that it was a factor that affects retention in a negative way, while other participants did not feel it affected their ability to be retained.

5. Sense of belonging and social networks (social integration)

Feelings of being a part of academic life of the institution also affect the retention of adult and Māori students. The multiple roles adult students experience in the workplace and as family members may create a limitation these students to engage with an institution. This is supported in the literature where studies have shown that students studying externally are more likely to withdraw than those studying internally. This is possibly as a result of feeling disconnected from the institution or the difficulties associated with limited contact with lecturers and peers (Long, Carpenter, & Hayden, 1995).

The focus group reported that close bonds and team spirit developed in class with classmates and the kaiako, and outside class within the institution through activities or services provided. Participants stated that this created some responsibility to care for and support class members and the institution as a whole. Some comments from the focus group students referred to how they needed to feel they belonged to the institution by interacting with staff (both administration and

teaching staff) and students of a similar background and cultural experience. As well, some of them commented that the 'family-like' environment assisted the socialisation of students into the institution.

Also the cultural tikanga or philosophy when practised contributes to students' feelings of connectedness or sense of belonging.

A: I felt connected from the very first day. We were welcomed with a powhiri [welcoming ceremony] then started and ended class with a karakia [traditional prayer]. This suited me 'cause that's what I practise in my every day life. It made it easier that the set up was familiar, I didn't have to change, and I felt respected by the institution.

Some of the focus group participants stated institutional staff contributions to social and environmental integration are important in achieving positive student retention. Indeed some reported that the strongest single source of influence for them to remain engaged in study was their classroom environment.

H: I really looked forward to coming to class. It was great to be at the Wa [Te Wānanga o Aotearoa]. The environment was so relaxing and we all really liked the classroom set up with small class sizes and the same kaiako each day. We were like one big whānau [family].

Evidence from the focus group suggests that outcomes improve where institutions make personal contact within class time and show commitment to students' total well-being. Examples include facilitating social networks and promoting social integration through special social programmes such as clubs, cultural groups and sporting activities.

D: I loved doing kapa haka [ceremonial dance] every week. It really bought the campus together, and it was a great time to meet up with other people in other courses. It was taken by one of the tutors and it was cool to see them in a different light.

C: There is a student council and we felt heard. I enjoyed being part of this group, and would do it outside of my class. I made the commitment and like it.

Another perspective arose, however, and one participant in the group indicated that while they supported the institution's role in social integration, they warned that too much social activity could negatively affect academic outcomes.

G: I found all the time out of class annoying. We always stopped for powhiri [welcoming ceremony], and our class were expected to travel together to tangi [funerals] of classmates and their family. Then there was the kapa haka [ceremonial dance] on Wednesday mornings for three hours. I reckon that this should have not been class time. I didn't come to learn that stuff.

Review

A sense of belonging and being integrated into the institution socially appeared to significantly affect retention of adult students, including Māori within the context of this study.

6. Prior educational experience

Among pre-entry student characteristics, previous educational experiences are significant predictors of retention (Adamson & McAleavy, 2000; Wilson, 2005-6). However, participants in the focus group did not feel that this was a factor affecting their retention.

A: I don't reckon that being the first one to go to uni [university] was a problem. I think I came to the Wānanga [o Aotearoa] to learn so it would be weird to come in already knowing everything, wouldn't it? And I even know people who have been to uni [university] in the mainstream and they don't know more than me.

An unfamiliar educational environment has been cited in research as a factor negatively affecting student retention in tertiary education (Nikora, et al., 2002). This was not reflected in the focus group. This may be due to the fact that Te Wānanga o Aotearoa's environment is culturally adapted, and therefore the unfamiliarity that can affect retention such as the ability to navigate the landscape is not required.

G: I liked that fact that the campus is in our community, and I know the people running it. It made coming to study not such a big deal. Going to Massey [University] and stuff is a bit daunting and I'm not sure if I could even fill out their enrolment form let alone pass an exam and stuff. I like 'the Wa' [Te Wānanga o

Aotearoa] because it's not scary and it's for the community by the community kind of approach.

Review

Participants from the focus group did not identify *prior educational experience* as significantly related to their retention.

Recount

The preceding explanation and discussion of the data from the interviews was structured around the six factors that were distilled from the review of literature. Of these six factors, the interview data failed to empirically substantiate two as influences on retention. These were *sense of belonging and social networks (social integration)* and *prior educational experience*. Additionally data were obtained that did not fit the six factor framework used to organise the results. These data concerned student motivation and pre-enrolment and induction processes. The original framework required modification to better accommodate the data. Accordingly, two new factors of *student motivation* and *pre-enrolment and induction processes* were proposed and *sense of belonging and social networks (social integration)* and *prior educational experience* were removed. The data which pertained to the deleted factors was accommodated within the emergent factors.

7. Student motivation

The participants in this study generally indicated that their commitment to higher education was not the product of a sudden decision.

A: I had to make sure I was doing the right thing. I had thought about what to study and where to study for years. Finally I knew it was the right time.

Various forms of motivation for remaining in tertiary study were highlighted. This motivation came in both intrinsic and extrinsic forms. In several instances, the desire to support Māori kaupapa (the underpinning philosophy) and Māori people came through very strongly as a motivating factor in setting educational goals.

A: What was pushing me along was that I wanted to work in a position where I would be able to help people, but Māori people in particular. In going through [university] you get more of an idea that there are not enough people out there that understand what Māori people are going through, that can offer them a place where they feel comfortable. Maybe having a korero [talk], not having the little things that really annoy you like sitting on tables. Just being in an environment where you can offer a service that is not offered by other people who are Māori. Just being there for people.

B: I think the biggest one is motivation. If you can motivate a person then they will seek the information anyway. Then they know they can achieve that. That has to come a lot from the teachers. Teachers have to be motivated to motivate their students. They have to want to get the best from students. A lot of Māori teachers going in now come from those backgrounds as well so are identifying what those students need. They can relate to them better.

Focus group participants indicated that personal development was an important reason for their enrolment along with greater opportunities for employment. A number of respondents were very keen on Social Work as a career, largely as a result of their own experiences. Others were keen to pursue avenues that would help their hapū (sub-tribe) or iwi (tribe). This approach, without co-ordination, can also create problems - for example, the current apparent excess of Māori lawyers graduating without comparable numbers of jobs available for them.

Those students who have considered withdrawing or who had withdrawn gave greater importance to pleasing others and being with friends as reasons for enrolment. This can be contrasted with those who had not considered withdrawal, indicating they assigned greater importance to intellectual stimulation and interest. It is hardly surprising that withdrawal is considered when the motivation for study came from the influence of others.

E: My family really wanted me to study. I didn't really want to but it was what was expected of me. I was supposed to be the one who would go off and get my tohu [qualification] then come back and teach the iwi's [tribe] tamariki [children]. There was a lot of pressure, and it made studying no fun. I just rebelled and quit.

B: Also, not so much my mother (who was pro- Māori) my father wanted me to be a lawyer or something from a university. It was hard choosing something. Will my father be happy? That was always in the back of my mind. Will he approve?

Some students were motivated by their own experiences and pursuit of the career paths they had chosen.

H: When I first came to Te Wānanga o Aotearoa, I applied for the Bachelor of Teaching ... intending to be a teacher, but I didn't make the grade. So that year I switched to the Teacher Aide course. The idea is that after I got my Teacher Aide Certificate, I'll apply for Bachelor of Teaching again and get in. That's why I'm doing the Teacher Aide course.

Sheer self determination was another intrinsic factor for some of those who did not withdraw.

A: I was really determined to succeed.

Tied into motivating factors, a large number of respondents pointed to the low self esteem and lack of confidence in their own ability as major factors Māori had to overcome to succeed in education - especially at the tertiary level.

B: Belief that I could actually do it. I was aware but it was harder being a girl and non white. Had to convince myself that I could do it. I've always done okay but never as good as the teachers said my brain capacity was. I have to experience things myself. Learning how to learn best. Partly my low self esteem as well. I had to overcome that.

H: The most significant is being able to say to myself, "If I fail, at least I've had a go, because if I don't try now, I will regret it". The second barrier was the financial one. I thought I'd be totally in debt, but I jumped in anyway. Then the third was discouragement from others - it made me wonder if it was the right thing to do. I wondered whether to take the quick option out because I had a son to support, but I thought of his future. They would all be on a par level.

F: The most significant would be fear - self doubt. I remember getting two rewrites in my course and thinking "Oh, I knew I couldn't do it". That can be a barrier. A couple of Māori left because the course was too hard rather than seeking assistance. It's the fear of failure or of success. Successful Māori tend to be called "Pakeha-fied" [European-ised]. I've done that myself. I've put other people down for what I feel.

B: Just letting other Māori know that it is not as hard as they think it is - getting an education. Anybody can do it. There is no limit to what you can do. It's what you set your mind to. Finding funding, you can always fall back on a loan although it's not a good way to start your life once you get your qualification.

Review

Motivation appeared from the data to be an influence on the ability of adult students, including Māori, to be retained in tertiary education.

8. Pre-enrolment and induction processes

The literature highlights the effects of a lack of academic counselling and pre-enrolment advice, namely, that students make the wrong choices. Wrong choices can be made at different levels – choice of institution, field of study, or course (Zepke, et al., 2003).

Choosing the wrong course can result in significant levels of withdrawal. This was evidenced by the focus group participants who had withdrawn because they believed they were enrolled into the wrong course. Participants highlighted that Te Wānanga o Aotearoa does not supply career or academic advice, counselling, or pre-enrolment advice. The comments from two participants showed the effect of lack of pre-enrolment advice and career and/or academic counselling.

G: The course I enrolled in wasn't exactly what I thought it was going to be. I didn't really know much about it before I signed up, it wasn't really what I wanted.

F: The programme I was on was too academic for me. I should have started at the level below. It made the course not very enjoyable and I really struggled all year

Of those who had not considered withdrawal, an important or major reason was that they had selected the right course.

A: I did my homework with what course I wanted to do. I always knew it was the right course for me to be doing.

B: I never considered withdrawing, I just never thought about it. I always knew what I wanted to do and in what order so it was never in question.

Previous studies also show that orientation and/or induction programmes help academic integration and improve student outcomes. There is strong evidence that orientation programmes provide anticipatory socialization, whereby individuals come to anticipate correctly the values, norms and behaviours they will encounter at university (Bailey, Bauman, & Lata, 1988; Braxton, et al., 1995; Walker, 2000; Yorke, 1999). Yorke (1999) found that one of the top four factors responsible for early withdrawal included dissatisfaction with induction into study, and Walker (2000) found that a welcoming orientation programme helped retain aboriginal students.

Results from these studies show that an induction programme appears to help retention. The general view of the focus group was that the induction pack provided by the institution needs to be small, concise, and easy to understand. The document needs to include only the details that are important at that time of year, such as class times, and important dates. Most agreed that if they were handed a student induction booklet that was too big, or crammed with policy, assessment and learning requirements, this would have the undesired effect of unsettling students, and could possibly lead to a withdrawal.

E: The orientation book had lots of policies and paper, and I never attempted to read it. I would have preferred it to just have the details relevant to my course, not all the courses. Then I might have read some.

Review

Pre-enrolment and induction processes appeared from the data to be a significant factor affecting retention. Orientation to the institution also featured within the *pre-enrolment and induction processes*, as did the significance of pre-enrolment advice about course selection.

Recount

Following analysis of the focus group interview data, a revised conceptual framework of the influences on retention was produced. The seven element framework comprised:

1. Kaiako (teacher) characteristics;
2. Whānau (family) features;
3. Integration processes and institutional climate;
4. Employment and financial situation;
5. Sense of belonging and social networks (social integration)
6. Student motivation; and
7. Pre-enrolment and induction processes.

Qualification of student retention – attitudes and behaviours

The seven elements identified in the qualitative phase concerned influences on retention as opposed to elements that specifically described the characteristics of students who were anticipated to complete their course of study or had completed their course of study (See Hagedorn, 2005). These personal factors include attitudes (see Ajzen, 2001; Crano & Prislin, 2006) and behaviours (see Kandel, Schwartz, & Jessell, 2000). So retention or continued participation in tertiary study likely results from the interaction between contextual influences and specific attitudes and behaviours of the student. Accordingly, this study sought to examine this interaction quantitatively (see Research Question 3) which required the defining of a variable concerning student retention attitudes and behaviours.

The interview data and the literature were re-examined to identify particular attitudes and behaviours. Six student attitudes and four student behaviours were identified. These were:

Student attitudes:

1. Belief in own ability;
2. Realistic expectations;
3. Positive financial attitude;
4. Commitment to the institution;
5. Internal drive; and
6. Cultural orientation.

Student behaviours:

1. Adaptability;
2. Time availability and management;
3. Extra-curricular participation; and
4. Attendance.

Summary

This chapter presented and discussed the results of the qualitative phase of the research. This phase utilised the hui (focus group) method to collect textual data from eight respondents. Factors impacting on retention in tertiary education were identified. The findings of the qualitative phase of the research then informed the quantitative phase with regards to the development of the instrument. The next chapter, Chapter Five, presents the results of the quantitative phase of this research.

Ehara taku toa i te toa takitahi engari he toa takitini

One cannot win by themselves
but with the help of many you will concur

CHAPTER FIVE

QUANTITATIVE RESULTS

Overview

This chapter presents the results of the quantitative phase of the empirical investigation. The first section presents the results of a pilot study in which descriptive statistics were used to gain a preliminary understanding of the measurement properties of data from multiple instruments. This information was used to identify items that may have confounded respondents and/or elicited data on constructs other than the particular trait being measured. After refinement, the resulting instruments were then considered to be measuring sufficiently well to be used for large-scale data collection in the next phase.

The second section reports on the analyses of data when the instruments were administered to the research sample. These analyses used RUMM 2020 (RUMM Laboratories Pty Ltd, 2007) to estimate fit statistics which were used to diagnose item-data fit to the Rasch model and to inform modification of the data set so that the retained data were measures. They also provided estimates of item difficulty to inform understanding of the traits under investigation.

The third section reports on testing the dependency between calibrated person scores on the traits measured by the respective instruments. First, a multiple regression analysis with the dependent variable of *student retention attitudes and behaviours* was conducted to ascertain the proportion of variance in this variable accounted for by the independent variables. Next the association between the *student ethnicity* and the other variables was examined by conducting one-way analysis of variance using SPSS (SPSS Inc., 2008).

Stage One: Pilot study results

At the conclusion of the qualitative phase, a seven element preliminary framework of factors considered influential on retention was proposed. The elements were:

1. Kaiako (teacher) characteristics;
2. Whānau (family) features;
3. Integration processes and institutional climate;
4. Employment and financial situation;
5. Sense of belonging and social networks (social integration);
6. Student motivation; and
7. Pre-enrolment and induction processes.

However, when items were written for each of the seven factors, the *sense of belonging and social networks (social integration)* items appeared to also be indicating several of the other factor elements. Consequently, this element was deleted leaving six elements.

The items for the respective independent and dependent variables were developed from consideration of the literature review material, the focus group interview data and also the researcher's professional experience as a student services manager. The reliability and validity of the resultant scales would be empirically determined commencing with the pilot study. Following writing of 40 items for the six independent variables and 36 items for the dependent variable (see Appendix D), the items were administered to ten respondents. The scores ('1', '2', '3', or '4') along with the no response category ('5') were entered into Excel spreadsheets – one for each of the seven variables. Data were aggregated for each respondent and for each item. Then the data were sorted by respondent score (high to low) and item difficulty (easy to hard). The layout of the data should approximate a Guttman pattern if the items postulated to characterise respondents with 'more' of the attribute under investigation are affirmed for these students only. Guttman (1950, p. 62) noted that:

If a person endorses a more extreme statement, he should endorse **all** less extreme statements if the statements are to be considered a scale...We shall call a set of items of common content a scale if [and only if] a person with a higher rank than another person is just as high or higher on **every** item than the other person.

Items with disordered responses that could have been due to the less affirmative students affirming difficult items, and/or more affirmative students not affirming easy items, were either rewritten or removed from the instrument. The modified instruments and respective constituent items (are as) presented in Appendix F.

Stage Two: RUMM 2020 analyses

The items from the seven instruments were presented in a single survey comprising 72 questions with a four-point response scale (see Appendix F). Sample characteristics elicited by the demographic items prefacing the survey are presented in Table 5.1 below.

Table 5.1.
Sample characteristics (N=165)

Gender	Male	40
	Female	125
Age	25-40	81
	41-50	53
	51-60	23
	61 and over	7
Ethnicity	Māori	95
	Non-Māori	65
Employment profile	Yes	120
	No	38
	Paid	94
	Unpaid	17
	Part-time	44
	Full-time	55

Scores from the 165 returned surveys were recorded in an Excel spreadsheet ('4' =strongly agree, '3' = agree, '2' = disagree, and '1' = strongly disagree). The no comment responses or missing response were scored as '9'. Data for each of the seven variables were entered separately into RUMM 2020 and analysed independently. The separate analyses were in cognisance of a theoretical view of the variables not collectively constituting a single dominant trait.

The following analyses were conducted on data for each of the variables:

- Estimation of un-centralised thresholds to test whether the respondents chose from the response categories in a logical manner; and
- Estimation of individual item fit statistics to show how well the data from the item fitted the model.

The following table (Table 5.2) summarises the results of the first round of RUMM 2020 analyses for each of the seven student traits. Items with disordered thresholds and/or high residuals ($>\pm 2.0$) and low Chi Square probability values ($p < 0.05$) were identified.

Table 5.2.
Misfitting data in first round analyses

Instrument	Disordered thresholds	High residuals*	Low Chi square probability
1.Student retention attitudes and behaviours	14 items	10 items ($>\pm 2.0$)	5 items ($p < 0.05$)
2.Kaiako (teacher) characteristics	2 items	4 items ($>\pm 2.0$)	1 item ($p < 0.05$)
3. Whānau (family) features	2 items	2 items ($>\pm 2.0$)	1 item ($p < 0.05$)
4.Integration processes and institutional climate	5 items	1 item ($>\pm 2.0$)	2 items ($p < 0.05$)
5.Employment and financial situation	None	2 items ($>\pm 2.0$)	1 item ($p < 0.05$)
6.Student motivation	2 items	None	1 item ($p < 0.05$)
7.Pre-enrolment and induction processes	None	1 item ($>\pm 2.0$)	1 item ($p < 0.05$)

* Two of the residuals were >4.0 and of the remaining eight that were $>\pm 2.0$, all were $<\pm 3.0$.

Problems with data not fitting the model were resolved in two ways. First, data from scales containing items with disordered thresholds were modified by collapsing response categories. For example, collapsing scores in adjacent response categories such as '0' and '1' into one category. That is, rescoreing the 'strongly disagree' and 'disagree' responses as 'disagree'. Second, item data with poor fit to the model (high residuals or low Chi Square probability value) were deleted from the analysis.

Table 5.3 summarises the changes made to the instruments to ensure data better fitted the model and the number of items in each of the resultant instruments.

Table 5.3.
Modifications to instruments prior to final analyses

Instrument	Response categories modified	Item data deleted	Resulting scale size (Item data fits the model)
1.Student retention attitudes and behaviours	'Strongly disagree' and 'disagree' categories collapsed	2 items	34 items
2.Kaiako (teacher) characteristics	'Strongly disagree' and 'disagree' categories collapsed	4 items	6 items
3.Whānau (family) features	'Strongly disagree' and 'disagree' categories collapsed	2 items	5 items
4.Integration processes and institutional climate	'Strongly disagree' and 'disagree' categories collapsed	1 item	4 items
5.Employment and financial situation	None	1 item	4 items
6.Student motivation	'Strongly disagree' and 'disagree' categories collapsed	None	5 items
7.Pre-enrolment and induction processes	None	None	4 items

The retained data for each of the instruments was then analysed using RUMM 2020. After confirming that all the thresholds were ordered, the following estimations were made:

- Estimation of Summary Test-of-fit Statistics to show the global fit of person and item data to the model;
- Estimation of individual item fit statistics to show how well the data from the item fitted the model.

The fit of item data to the model can be illustrated by the Item Characteristic Curves which RUMM2020 generates. These compare observed values with the values predicted by the model for different class intervals of students. A curve for data from an item which fits the model closely is presented below in Figure 5.1.

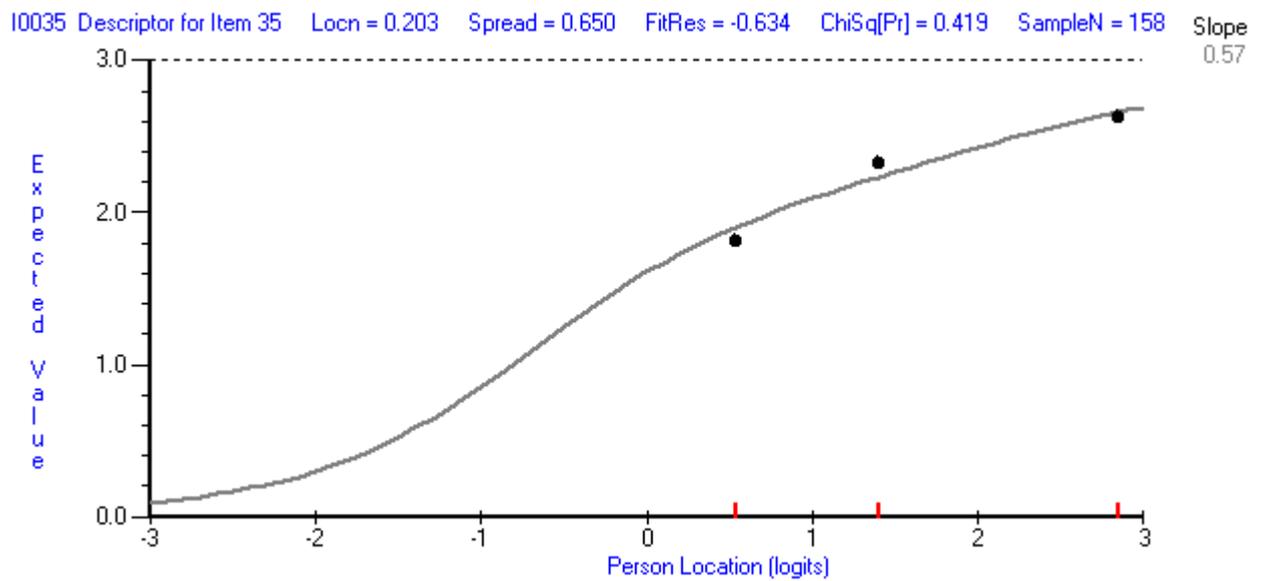


Figure 5.1. Item 35. Item Characteristic Curve – good data to model fit

The dots show the observed values and the curve shows the expected values. For these data, three class intervals of students were identified with mean locations of 0.5 logits, 1.4 logits and 2.8 logits. The observed values lie on or are close to the expected values curve due to the good data to model fit.

Figure 5.2 over page is the Item Characteristic Curve for item data which does not fit the model well. For students with relatively low locations (0.4 logits), the observed score is much higher than the expected score; and for high locations (2.7 logits), the observed scores are lower than the expected scores.

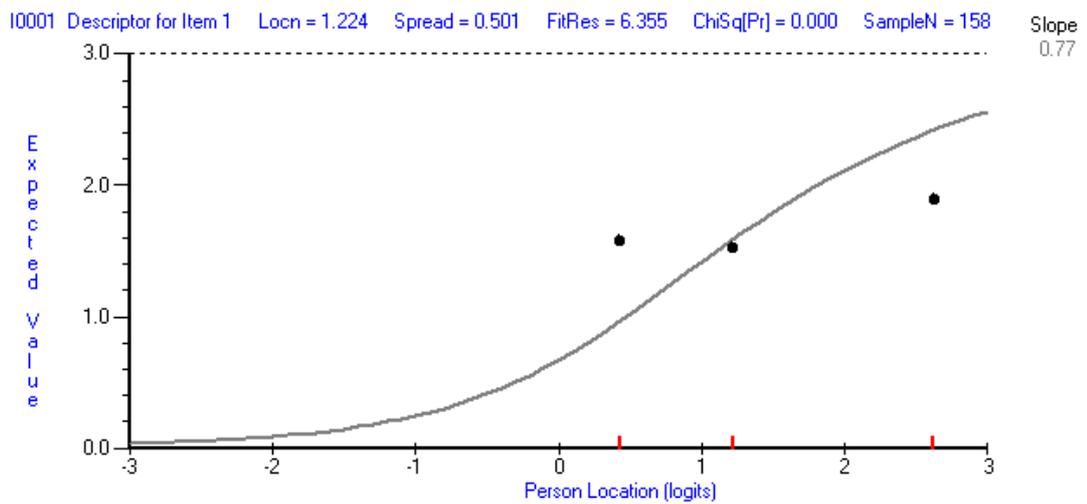


Figure 5.2. Item 1. Item Characteristic Curve – poor data to model fit

Tables 5.4 and 5.5 summarise the results of these analyses for data from the seven instruments.

Table 5.4.
Summary Test-of-fit Statistics - Item-person interaction for the seven scales

	Items		Students		
	Locations	Fit residual	Locations	Fit residual	
1.Student retention attitudes and behaviours	Mean	0.00	-0.29	1.14	-0.54
	Standard dev	0.95	1.65	1.61	1.90
2.Kaiako (teacher) characteristics	Mean	0.00	-0.64	1.81	-1.43
	Standard dev	0.40	0.92	2.23	2.05
3.Whānau (family) features	Mean	0.00	-0.25	1.73	-0.59
	Standard dev	1.01	0.76	2.26	1.16
4.Integration processes and institutional climate	Mean	0.00	-0.41	1.69	-0.81
	Standard dev	0.61	0.96	1.79	1.38
5.Employment and financial situation	Mean	0.00	-0.94	2.12	-1.41
	Standard dev	0.37	0.97	2.33	1.54
6.Student motivation	Mean	0.00	0.02	0.98	-0.55
	Standard dev	1.01	0.36	1.83	1.36
7.Pre-enrolment and induction processes	Mean	0.00	-0.14	2.26	-0.95
	Standard dev	0.69	1.74	1.92	1.50

In table 5.4, when the item data and person data fit the model well, the fit residuals approximate a distribution with a mean near zero and a standard deviation near one. For these data, the item data fit residual means are generally close to zero with negative values due to the data fitting the model very closely. The item fit residual standard deviations vary indicating the variance in item data may be less than ideal. The person data fit residual means are negative and below the ideal value of 0.00 indicating the person data fits the model very closely. The

person fit residual standard deviations vary indicating the variance in item data may be less than ideal.

Table 5.5.
Summary Test-of-fit Statistics - Item-trait interaction and reliability indexes

Scale	Total Item Chi-square	Total Deg of Freedom	Total Chi- Square Probability	Separation Index
Student retention attitudes and behaviours	276.01	68.00	0.00	0.95
Kaiako (teacher) characteristics	5.81	12.00	0.93	0.88
Whānau (family) features	17.45	10.00	0.07	0.85
Integration processes and institutional climate	13.70	8.00	0.09	0.78
Employment and financial situation	8.50	8.00	0.39	0.87
Student motivation	28.86	10.00	0.00	0.79
Pre-enrolment and induction processes	22.59	8.00	0.00	0.83

In table 5.5, the item-trait interaction test is a chi-square with a probability value of less than 0.05 indicating the data might not be uni-dimensional. The values in Table 5.5 do not all comply with this criterion suggesting some of the scales might not confirm strictly to the uni-dimensionality requirements of the Rasch model. The index of Person Separation (Andrich & Van-Schoubroeck, 1989) is the proportion of observed variance that is considered true – the maximum possible value is 1.00. For all the scales, the Separation Index was high - close to or more than 0.80.

The targeting of the Item difficulty to the affirmativeness of the students for each of the scales can be illustrated by the RUMM 2020 Person-Item Threshold Distribution. These are presented in the following seven figures.

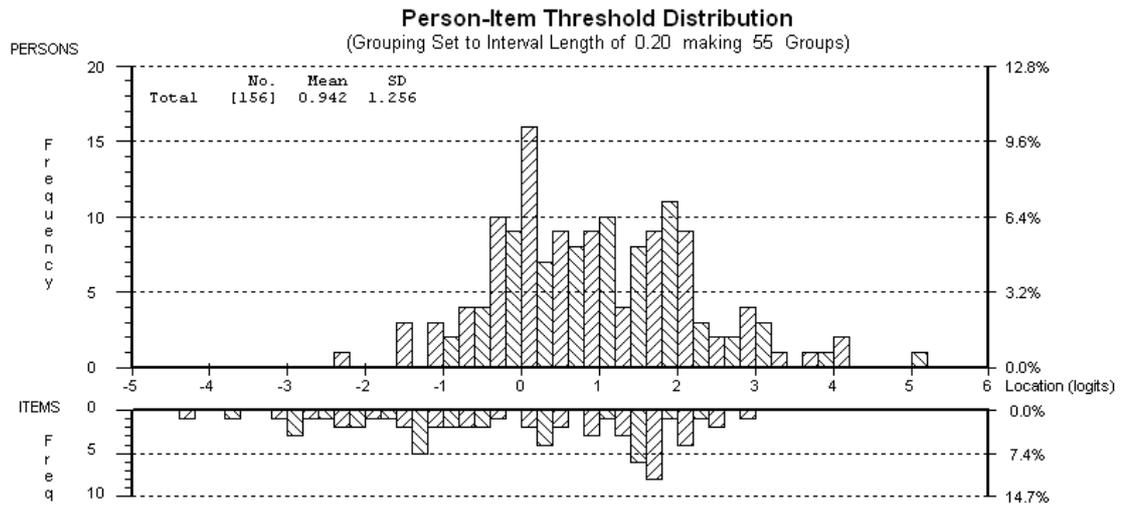


Figure 5.3. Distribution of students and item thresholds on the Student Retention Attitudes and Behaviours scale

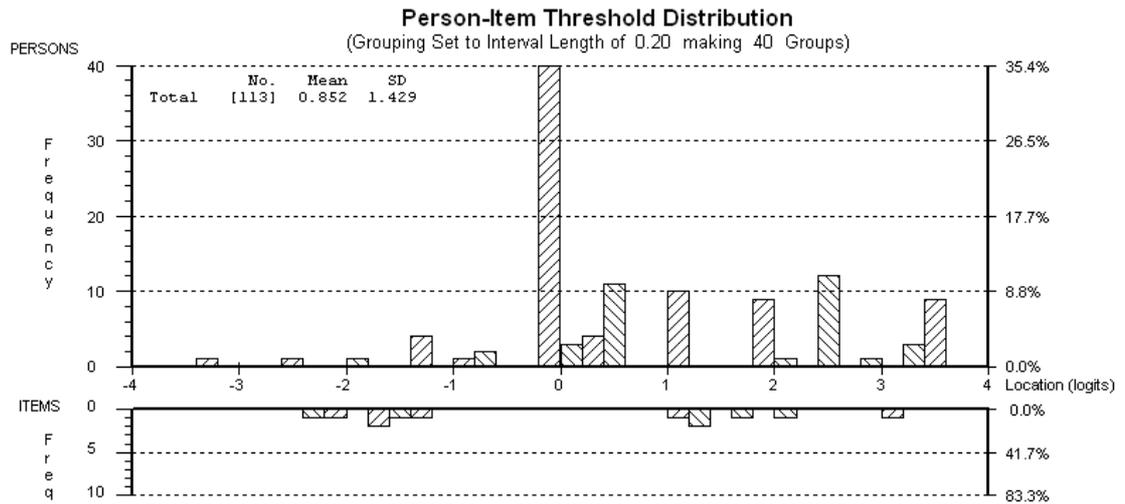


Figure 5.4. Distribution of students and item thresholds on the Kaiako (Teacher) Characteristics scale

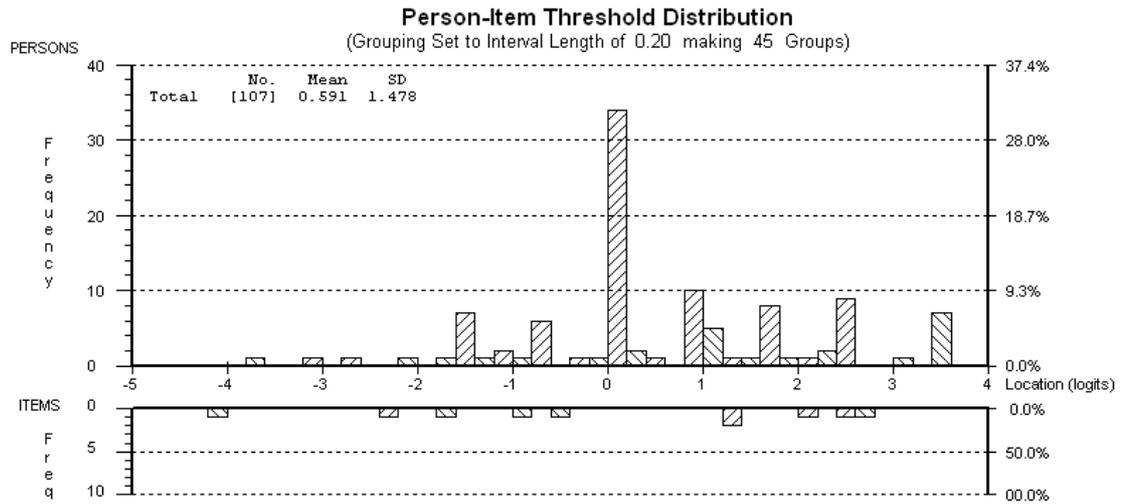


Figure 5.5. Distribution of students and item thresholds on the Whānau (Family) Features scale

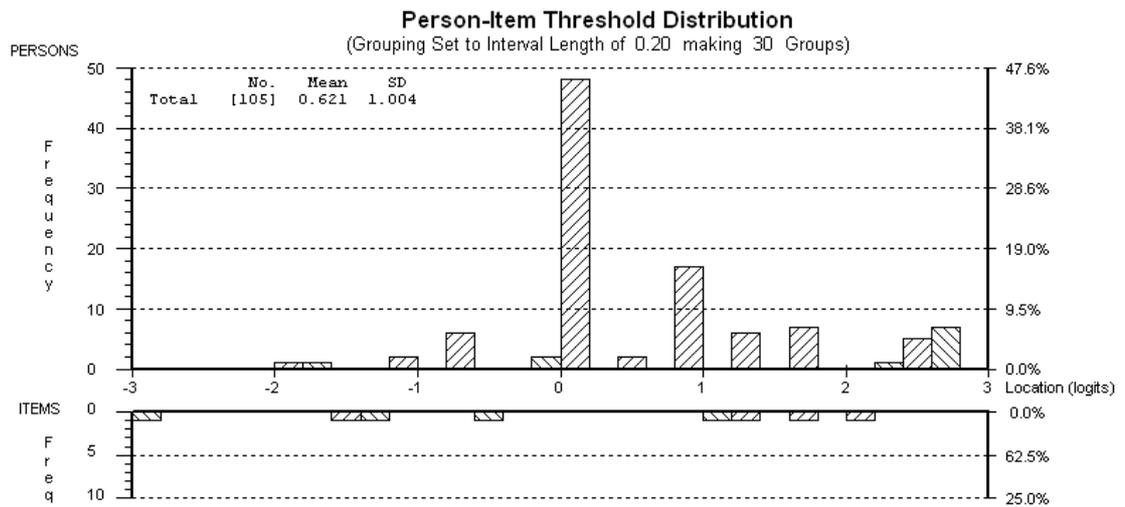


Figure 5.6. Distribution of students and item thresholds on the integration process and institutional climate scale

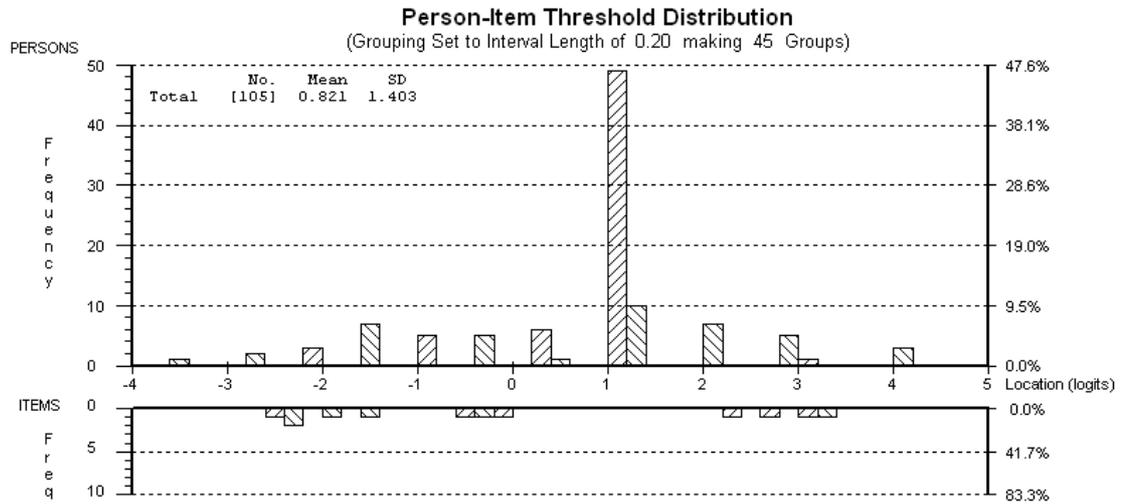


Figure 5.7: Distribution of students and item thresholds on the Employment and Financial Situation scale

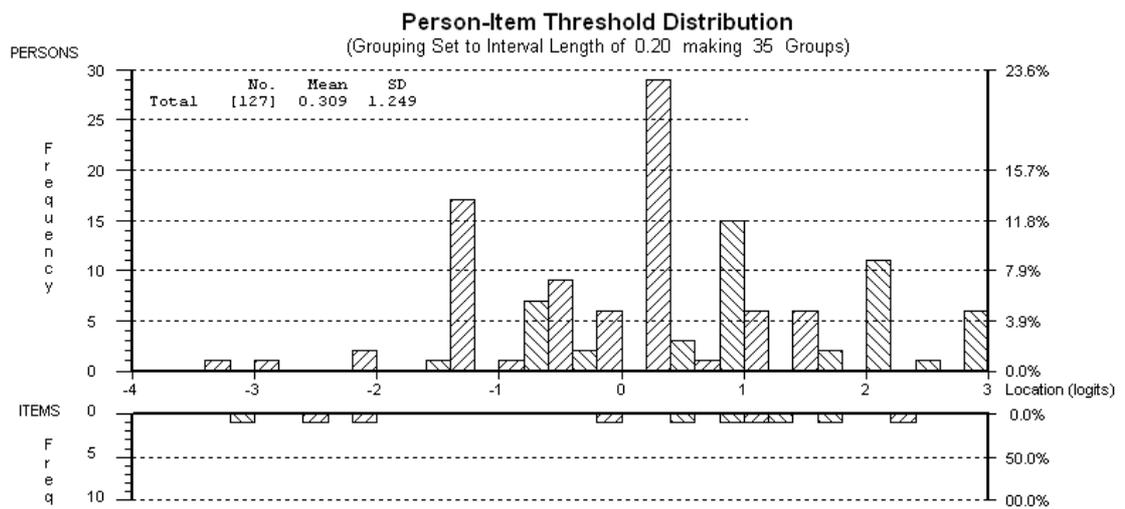


Figure 5.8: Distribution of students and item thresholds on the Student Motivation scale

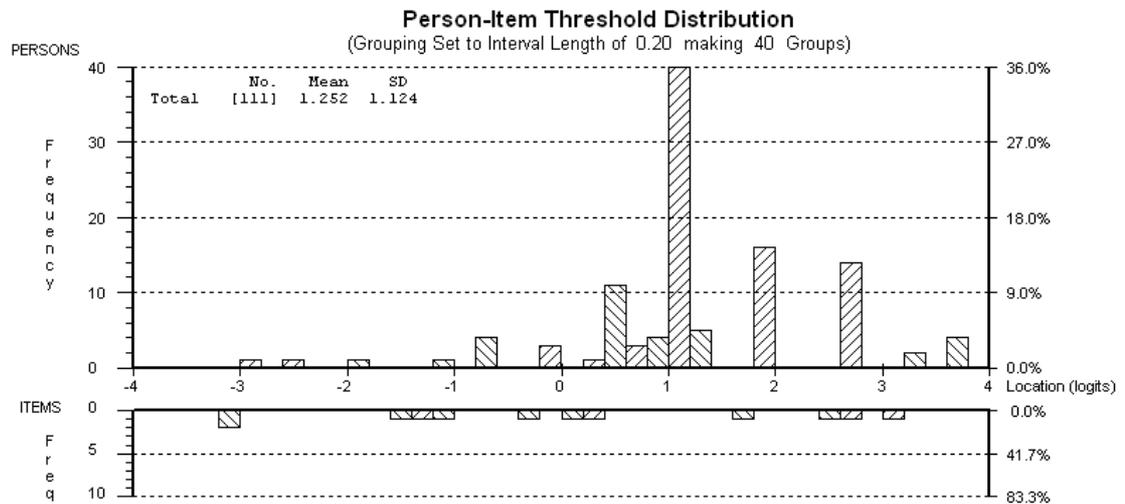


Figure 5.9: Distribution of students and item thresholds on the Pre-enrolment and induction processes scale

The distributions show that the ranges of student scores and respective item difficulties when measured on the same scale are generally similar for data from the seven scales. This shows that the items presented a range of difficulties that matched students' affirmativeness.

RUMM generated individual item-fit statistics and these are presented in Table 5.6 below. In Table 5.6, the items are grouped according to the seven scales (see Appendix F).

Table 5.6.
Individual item-fit – Serial order of seven scales (62 items)

Constructs and items	Location	SE	Residual	Deg Free	Dat Pts	Chi Sq	degF	Prob
Student retention attitudes and behaviours								
2	0.17	0.16	1.01	143	150	5.39	2	0.06
3	-1.20	0.17	-2.08	145	152	6.68	2	0.03
4	-0.89	0.17	-1.83	145	152	7.52	2	0.02
5	-0.22	0.15	-0.98	145	152	8.33	2	0.01
6	-0.02	0.17	-0.59	146	153	1.77	2	0.41
8	-0.14	0.17	-1.49	135	142	1.75	2	0.41
9	1.08	0.14	1.33	144	151	11.17	2	0.00
10	0.36	0.15	2.58	140	147	16.35	2	0.00
11	-0.03	0.15	0.96	142	149	5.87	2	0.05
12	-0.98	0.15	-1.55	142	149	5.36	2	0.06
13	-1.97	0.19	-2.29	144	151	11.89	2	0.00
14	-1.76	0.18	-2.44	145	152	13.44	2	0.00
15	-1.53	0.18	-2.14	145	152	14.00	2	0.00
16	-0.93	0.17	-2.80	143	150	11.72	2	0.00
17	-1.03	0.17	-0.69	144	151	13.79	2	0.00
18	0.07	0.15	-0.40	141	148	0.17	2	0.91
19	0.50	0.14	2.55	142	149	6.45	2	0.03
20	0.18	0.15	0.75	146	153	1.54	2	0.46
21	0.11	0.15	-0.69	141	148	1.72	2	0.42
22	-1.04	0.17	-1.96	146	153	9.56	2	0.00
23	-0.12	0.17	-2.14	144	151	9.33	2	0.00
24	0.36	0.20	-2.21	144	151	15.69	2	0.00
25	1.38	0.15	1.11	138	145	3.46	2	0.17
26	0.12	0.21	-0.24	133	140	0.54	2	0.76
27	0.57	0.15	-1.75	142	149	13.72	2	0.00
28	1.78	0.14	1.93	126	132	23.14	2	0.00
29	0.27	0.15	0.97	141	148	5.94	2	0.05
30	1.67	0.14	2.58	131	138	19.37	2	0.00
31	1.75	0.14	1.88	127	133	25.40	2	0.00
32	0.56	0.15	-0.50	138	145	1.16	2	0.56
33	-0.19	0.15	-0.26	139	146	0.86	2	0.64
34	0.42	0.14	1.87	138	145	2.10	2	0.34
35	0.14	0.16	-0.58	136	143	0.56	2	0.75
36	0.55	0.15	0.11	138	145	0.27	2	0.87
Kaiako (teacher) characteristics								
37	0.06	0.20	-1.31	90	113	1.56	2	0.45
38	0.69	0.21	-1.70	88	110	0.77	2	0.68
42	-0.16	0.19	0.56	77	97	0.14	2	0.93
43	-0.02	0.19	-1.26	85	107	0.92	2	0.63
45	-0.05	0.19	0.10	78	98	0.30	2	0.86
46	-0.52	0.21	-0.14	80	101	2.13	2	0.34

Table 5.6. continued

Constructs and items	Location	SE	Residual	Deg Free	Dat Pts	Chi Sq	degF	Prob
Whanau (family) features								
47	-0.55	0.20	0.92	76	101	4.68	2	0.09
48	-1.47	0.23	-0.71	74	98	5.26	2	0.07
50	0.49	0.22	-1.09	70	93	0.11	2	0.94
51	1.10	0.19	-0.26	76	100	5.73	2	0.05
52	0.51	0.20	-0.11	69	92	1.67	2	0.43
Integration processes and institutional climate								
54	-0.80	0.21	-0.08	70	101	1.60	2	0.44
56	0.32	0.20	-1.10	67	96	0.84	2	0.65
57	-0.11	0.20	-1.26	53	76	3.74	2	0.15
58	0.60	0.16	0.79	70	101	7.52	2	0.02
Employment and financial situation								
59	0.21	0.16	-1.15	71	103	0.34	2	0.84
60	0.17	0.19	0.09	68	98	2.01	2	0.36
61	-0.55	0.19	-2.18	65	94	4.95	2	0.08
62	0.18	0.19	-0.51	58	84	1.20	2	0.54
Student motivation								
64	-1.02	0.19	0.39	93	123	2.04	2	0.36
65	-0.60	0.17	0.18	93	123	2.54	2	0.28
66	-0.57	0.19	-0.24	84	111	10.46	2	0.00
67	1.12	0.16	0.24	82	108	8.75	2	0.01
68	1.07	0.17	-0.46	83	109	5.07	2	0.07
Pre-enrolment and induction processes								
69	-0.56	0.16	0.42	75	107	3.65	2	0.16
70	0.97	0.14	2.07	69	99	13.89	2	0.00
71	-0.44	0.20	-1.66	73	105	2.03	2	0.36
72	0.04	0.19	-1.37	68	98	3.03	2	0.21

*The labelling of the items is that used in the instrument with statistics from the deleted items not presented (for example, Item 1 is not reported).

The fit of data from the 62 individual items to the model was very good (see Table 5.7). The item difficulty locations ranged from 1.78 to -1.96 logits showing the items presented varying levels of difficulty for the respondents to affirm. The absolute values for the majority of the residuals were less than 2.0 due to the actual scores being acceptably close to those predicted by the model. The Chi Square statistics for the majority of the items had probability values >0.05 showing good fit of individual item data to the model.

However, nearly one quarter of the *retention attitudes and behaviour* items elicited data with chi square probability value <0.05 . Caution needs to be exercised in the interpretation of the scale for these items. This is because these items do not have the level of accuracy of the items with better fit to the model.

As stated earlier, the instrument (62-item questionnaire) was developed to measure student perceptions of aspects of retention. The item location logits that show the level of difficulty the students had in affirming the items enable comparison of the affirmativeness of students when responding to items within a scale. To assist in comparing item difficulties in Table 5.6, the items located below -1.0 logits were arbitrarily considered as 'easy', items located between -1.0 and 0.0 logits were considered 'moderately easy', items located between 0.0 and +1.0 were considered 'moderately difficult', and items at and above +1.0 were considered 'difficult'.

For example, within the *student retention attitude* items (Items 1-19) Item 3 '*I was determined to succeed*', Item 13 '*It was important for me to achieve my goals*', Item 14 '*I wanted to achieve my long term goals*', Item 15 '*It was important to me to complete my course*', and Item 17 '*I felt comfortable in a Māori environment*' all had logits that fell between -1.03 and -1.97 indicating that these items were easy for students to affirm. Item 4 '*I believed that I could/would succeed*', Item 5 '*I believed that I was smart enough to pass*', Item 6 '*I believed that I could understand the work required in the course*', Item 8 '*My values matched that of the institution*', Item 11 '*It was important to me to engage with other students and share experiences*', Item 12 '*I saw attending class as important to success*', and Item 16 '*I believed I was responsible for course success and/or goal achievement*' all scored logits of between -0.03 and -0.93 and were therefore deemed moderately easy by the model. Interestingly, Item 6 and Item 11 were close to 0 on the scale of difficulty, as was Item 18 '*I was aware of tikanga (Māori philosophies and processes)*' although it fell on the side of moderately difficult, as did Item 19 '*I had knowledge of Māoritanga (things Māori)*', Item 10 '*It was important to me to make*

friends with other students', and Item 2 '*I believed that I could cope at a tertiary level of study*' with logits of 0.50, 0.36, and 0.17 respectively. Item 9 '*I did not feel under pressure to complete my course work*' was the only item that measured with a logit that indicates it was difficult for students to affirm, and that only students with the characteristics to be retained would confirm this item.

Student retention behaviour items were a lot more difficult to affirm, indicating that mainly, only students who demonstrated the behaviour associated with the ability to be retained would confirm the majority of these. Item 22 '*I planned to stay enrolled until the completion of my course*' was the only item that recorded a logit that indicated it was easy to confirm, that being -1.04. Item 23 '*I was flexible while studying*' and Item 33 '*I attended class regularly enough to meet the minimum attendance requirements of the course*' were deemed moderately easy with recorded logits of -0.12 and -0.19.

Item 20 '*I was able to handle my personal issues*', Item 21 '*I achieved my goals*', Item 24 '*I was able to deal with new tasks easily*', Item 26 '*I was usually ahead in my course work*', Item 27 '*I had enough time to complete my course requirements*', Item 29 '*I arrived to class on time*', Item 32 '*I discussed course material with my classmates before and/or after class*', Item 34 '*I only chose courses that I enjoyed*', Item 35 '*I had opportunities to express my culture within the course*', and Item 36 '*During the time of my study I was aware of kawa (Māori regional practices)*' all scored logits between 0.11 and 0.57, indicating that these 10 items were moderately difficult for students to affirm. The most difficult items to affirm for students were Item 25 '*I usually handed my course work in early*', Item 28 '*I spent more time than just class time on campus*', Item 30 '*I arrived early and stayed after class*', and Item 31 '*I spent time on campus outside of class time*'. These items had locations scores of 1.38, 1.78, 1.67, and 1.75 respectively. This indicates that these items would only be affirmed by students who demonstrated the characteristics of students with the ability to remain engaged in study, or in other words, to be retained.

Kaiako (teacher) characteristics had 10 items. Item 37, 'I found the assessment in the course relevant to the course content' and Item 38 'I found the assessment in the course suited me' had logits of 0.06 and 0.69 respectively, indicating that these items were both moderately difficult for students to confirm. Whereas Item 42 'My teacher understood the ways that Māori students learn', Item 43 'The delivery mode of my course suited my lifestyle', Item 45 'My teacher was available to talk to about personal matters that affected class work', and Item 46 'My teacher recognised the life skills I brought to the classroom' scored logits of -0.16, -0.02, -0.05, and -0.52 respectively, indicating that these four items were all moderately easy for students to affirm.

Five items measuring the impact of *whānau (family) factors* on the ability for students to be retained showed that Item 47 'I have positive role models in education' and Item 48 'I believe that support is given to Māori students at Te Wānanga o Aotearoa' had locations of -0.55 and -1.47 indicating that these items were moderately easy and easy to confirm respectively. As opposed to the next three items; Item 50 'My community responsibilities did not negatively affect my study', Item 51 'My whānau responsibilities did not negatively affect my study' and Item 52 'My whānau support helped me stay at Te Wānanga o Aotearoa' which all had positive logits of 0.49, 1.10, and 0.51 making Item 50 and Item 52 moderately difficult, and Item 51 difficult for students to affirm.

Integration processes and institutional climate were measured by 5 items in the student questionnaire. Item 54 'I liked the Māori cultural context of Te Wānanga o Aotearoa' along with Item 57 'I felt that being Māori was a positive thing at Te Wānanga o Aotearoa' both scored logits of between -1.0 and 0 i.e. -0.80 and -0.11 respectively indicating that both these items were moderately easy to affirm for the participating students. The two items that were moderately difficult to affirm were Item 56 'I did not feel lonely at Te Wānanga o Aotearoa' and Item 58 'I was able to fit my life around my study' which had logits of 0.32 and 0.60 respectively.

When *employment and financial factors* were looked at with relation to their logits, it was found that three of the four items were moderately difficult to affirm. These were Items 59 '*Finances did not affect my ability to stay in study*', Item 60 '*I felt I had access to enough money to get me through my study*' along with Item 62 '*I had the finances to pay for my study*'. However, Item 61 in this section '*I was able to afford the course I wanted to do*' proved moderately easy for students to affirm.

Student motivation factors and their affect on a student's ability to be retained were also considered. Results of the individual item fit table show a wide range of scores ranging from easy to difficult. Item 64 '*I was internally motivated to study (self-motivated)*' was deemed easy by participating students showing a location score of -1.02. Item 65 '*My life experiences influenced my course choice*' and Item 66 '*I wanted to study at a Māori provider*' were deemed moderately easy with similar logits of -0.60 and -0.57. As opposed to Item 67 '*Other people wanted me to study*' and Item 68 '*My family really wanted me to study*' which recorded logits of 1.12 and 1.07 respectively, making these items difficult to affirm.

Pre-enrolment and induction process factors were the final group of items posed to students in the questionnaire regarding factors affecting retention. Item 69 '*I always knew it was the right course for me to be doing*' and Item 71 '*I found the induction informative*' both recorded logits between -1.0 and 0, indicating that these items were easy to affirm. Item 72 '*I found the orientation programme beneficial*' was near the middle of the scale of difficulty with a logit of 0.04, and Item 70 '*I talked to people about what course to do before I enrolled*' recorded a logit of 0.97 which makes this item moderately difficult for students to affirm, bordering on difficult.

Stage Three: Parametric analyses of associations between variables

Multiple regression analysis

The model tested by multiple regression analysis specified *student retention attitudes and behaviours* as the dependent variable with the following variables specified as independent variables – *Kaiako (teacher) characteristics; Whānau (family) features; Integration processes and institutional climate; Employment and financial situation; Student motivation; and Pre-enrolment and induction processes*. The measures of the seven variables for each of the 165 students were obtained by RUMM estimating person locations. The person locations are a measure of the affirmativeness of the students for each of the variables. These are plotted on an interval scale of logits (the logarithmic odds of a student affirming the items). These calibrated scores (logits) for each student were the interval data entered into SPSS (SPSS Inc., 2008) and analysed by multiple regression.

When the independent variables were regressed step-wise against the dependent variable, the six independent variables accounted for over 60% of the variance in *student retention attitudes and behaviours* ($R = 0.79$, $R\text{ Square} = 0.62$, $\text{Adjusted } R\text{ Square} = 0.60$, $\text{Std. Error of the Estimate} = 1.07$). The Analysis of Variance showed the variance was statistically significant ($F = 34.89$, $p < 0.00$).

Table 5.7.
Multiple regression analysis coefficients

	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std.Error	Beta			
Model						
Constant	-0.12	0.16			-0.78	0.44
Kaiako (teacher)	0.22	0.06	0.29		3.63	0.00
Whānau (family)	0.02	0.04	0.02		0.35	0.73
Integration	0.13	0.07	0.14		1.85	0.07
Economic	0.08	0.05	0.11		1.65	0.10
Motivation	0.30	0.07	0.33		4.23	0.00
Pre-enrolment	0.07	0.6	0.08		1.11	0.27

a. Dependent Variable: Student Retention Attitudes and behaviours

The standardised coefficient or beta weight (β) provides a standardised measure of the association between two variables. For the independent variable *kaiako (teacher) characteristics*, students believe that when there is a unit positive change in *kaiako (teacher) characteristics*, then their *student retention attitudes and behaviours* increase by 0.29 ($p < 0.00$) when the other independent variables are mutually controlled. Similarly, students believe that when there is a unit change in *motivation*, then their *student retention attitudes and behaviours* increase by 0.33 ($p < 0.00$) when the other independent variables are mutually controlled. Associations between the other four independent variables and the dependent variable were not confirmed ($p > 0.05$).

Analysis of variance in the seven variables accounted for by student Māori/non-Māori ethnicity

One-way analysis of variance (ANOVA) was applied to test whether student ethnicity (Māori/non-Māori) significantly accounted for variance in the data from the seven scales. The results are presented in Table 5.8 over page.

Table 5.8.
ANOVA in data from the seven scales

		Sum of Squares	df	Mean Square	F	Sig.
Student retention Attitudes & Behaviours * Ethnicity	Between Groups (combined)	20.31	4	5.08	2.01	0.10
	Within Groups	394.78	156	2.53		
	Total	415.09	160			
Kaiako (teacher) characteristics * Ethnicity	Between Groups (combined)	36.53	4	9.13	1.88	0.12
	Within Groups	722.28	149	4.85		
	Total	758.81	153			
Whānau (family) factors * Ethnicity	Between Groups (combined)	3.48	4	0.87	0.17	0.95
	Within Groups	750.16	145	5.18		
	Total	753.64	149			
Integration processes and institutional climate * Ethnicity	Between Groups (combined)	33.02	4	8.25	2.70	0.03
	Within Groups	448.79	147	3.05		
	Total	481.80	151			
Employment and financial situation * Ethnicity	Between Groups (combined)	13.39	4	3.35	0.61	0.66
	Within Groups	787.477	143	5.51		
	Total	800.87	147			
Student motivation * Ethnicity	Between Groups (combined)	18.22	4	4.56	1.37	0.25
	Within Groups	497.39	149	3.34		
	Total	515.61	153			
Pre-enrolment and inductions processes * Ethnicity	Between Groups (combined)	28.31	4	7.08	1.96	0.10
	Within Groups	526.14	146	3.60		
	Total	554.45	150			

Of the seven variables, whether a student was Māori or not only accounted for variance in the calibrated scores for *integration processes and institutional climate* ($F = 2.70$, $p < 0.05$). To test the strength of this association the Eta Squared (η^2) statistic was estimated. This shows the proportion of variance in the dependent variable accounted for by the independent variable. The η and η^2 statistics are presented in Table 5.9 below. The proportion of variance in the seven variables due to the students being Māori or non-Māori was less than 10% in all cases – the effect of student ethnicity was weak.

Table 5.9.
Measure of association – effect size

Variable	Eta	Eta Squared
Attit & Behav * Ethnicity	0.22	0.05
Kaiako (teacher) * Ethnicity	0.22	0.05
Whānau (family) * Ethnicity	0.07	0.01
Integration * Ethnicity	0.26	0.07
Economic * Ethnicity	0.13	0.02
Motivation * Ethnicity	0.19	0.04
Pre-enrolment * Ethnicity	0.23	0.05

Summary

This chapter presented the results of the three stages of the quantitative phase of the empirical investigation. The first section reported the results of the pilot study and how a small data set was used in examining the ordering of items in the respective scales. This process involved looking for Guttman patterns within the data to identify items requiring revision. The next section presented the results of the RUMM2020 analysis of data from the seven scales that were administered to the research sample. For each scale, global fit of data to the model, thresholds, and individual item fit were estimated. These statistics were then applied to modify the data so that it better fitted the model. A second round of analyses confirmed that each scale was eliciting interval data and the data were measures (refer to Research Question 1). This also generated item difficulty logits which assisted in further qualification of the traits under investigation (refer to Research Question 2); and also student location logits - calibrated scores from each scale. The third section reported applied SPSS to conduct a multiple regression analysis (refer to Research Question 3) and one-way analysis of variance using the calibrated-score data (refer to Research Questions 4 and 5). The findings presented in this chapter will be discussed in Chapter Six.

Whaowhia te kete mātauranga.

Fill the basket of knowledge to improve what we know.

CHAPTER SIX

DISCUSSION OF THE FINDINGS

Overview

This Chapter builds on the discussion of the qualitative results in Chapter Four and the quantitative results in Chapter Five. In Part One, it is organised around the seven scales affecting retention that were measured in the quantitative phase. Findings pertaining to these seven scales are discussed in relation to relevant previous research findings and literature.

In part Two, the chapter presents a series of propositions derived from the empirical findings of this study regarding the nature of retention in indigenous tertiary institutions.

Part One: Discussion of key constructs

1. Student retention attitudes and behaviours

Within this study, particular *student retention attitudes and behaviours* were associated with overall retention attitudes and behaviours. Students with higher retention attitudes and behaviours were able to affirm the more difficult items. Thus, the more difficult items characterise students with higher retention attitudes and behaviours. That is, items with higher logits characterise students who are more likely to remain in study.

The discussion of data regarding *student retention attitudes and behaviours* is split into three sections. These are social integration, retention characteristics of adult students (including Māori), and pressure.

Social integration

Social integration is a retention strategy often highlighted in the literature as having the ability to positively affect retention (Tinto, 1993; Tinto, et al., 1993). Tinto (1975) developed an explanatory, longitudinal model of the retention and/or withdrawal of students based on a degree of 'best fit' between student characteristics and institutional environment. Tinto's theory does not conform however, empirically or conceptually, to the demographic this research studied. Many adult and indigenous students do not seek either social or academic integration. According to the data produced it appears campus and social issues are largely irrelevant, and family, home, and work context are much more important. Interestingly, these more important factors are not under the control of the institution.

This research indicates that while a community of learning along with building social relationships is important for some students, it is not a driving factor for these students to remain in tertiary study. Items related to this concept such as Item 11 '*It was important to me to engage with other students and share experiences*' were moderately easy for students to affirm. Although Item 11 was moderately easy, the logit was close to 0 on the scale of difficulty. Within this study, the logit score for Item 11 indicates that when looking at student attitudinal factors affecting retention within an indigenous tertiary institution, engaging with other students and sharing experiences is common.

Building on this theme, Item 10 '*It was important to me to make friends with other students*' was moderately difficult for students to affirm (logit of 0.36). Therefore it could be assumed that *making friends* is a less common behaviour.

Current literature states that in relation to student social integration that if a student's value base is reflected in the institution, retention will be enhanced (Berger & Milem, 1999; Braunstein, McGrath, & Pescatrice, 2000-1). This concept is also consistent with Tinto's (1993) integration concept. However, looking at this from another perspective, if the value base of a student and an institution is not a match, or if the expectations of the student are not met with regards to values of the organisation, retention will be jeopardised. Item 8 '*My values matched that of the institution*' was also moderately easy to affirm for students within the study (logit of -0.14). This means that many students will hold this attitude. This item does not indicate that this is an attitude of retained learners only. It could be suggested that this item and its recorded data concerning student attitude may be institution specific, and require testing in a mainstream environment where it may be deemed statistically significant. As stated previously, around 55% of students are Māori, and on average over 90% of the student population are adult (i.e. over the age of 25) in any given year at Te Wānanga o Aotearoa. Therefore, being a Māori-led institution with a Māori kaupapa (philosophy) it is no surprise that participants found that their values matched that of the institution, and therefore found this item easy to affirm. It is suggested that one of the fundamental reasons students attend a kaupapa Māori institution is because the value base of the organisation matches the value base of the student.

Retention characteristics

The following sections report on six characteristics of adult students, including Māori that have the ability to affect retention of this demographic. These are:

- A. Flexibility;
- B. Time management;
- C. Ability to manage personal issues;
- D. Intention; and
- E. Time on campus.

A. Flexibility

As previously stated within discussions regarding *student retention attitude and behaviour*, flexibility on behalf of the institution and its staff may be a beneficial factor when trying to increase retention. It appears that student flexibility is already a common characteristic. Item 23 '*I was flexible while studying*' was moderately easy, to affirm (logit of -0.12). This may already be a common characteristic of these students due to their age and experience, as well as what other components make up their life. Adult students, including Māori, are more likely to have a job, be involved in caring for other individuals such as children or elderly parents, or be involved in community activities (Bean & Metzner, 1985). Therefore, their lives dictate that flexibility is an essential daily skill for them which already exists in their repertoire of behaviour. This may be a reason why participants in this study found this item moderately easy to affirm. However, building on this attitude, Item 24 '*I was able to deal with new tasks easily*' (logit 0.36) was moderately difficult to affirm. This indicates that those students with this behavioural characteristic were more likely to be retained. Therefore, having the attitude of being flexible is not enough to increase the ability for a student to be retained, but with the supporting behaviour of being able to deal with new tasks it may.

B. Time management

With regards to time management, Item 26 '*I was usually ahead in my course work*'; Item 27 '*I had enough time to complete my course requirements*'; and, Item 29 '*I arrived to class on time*', all elicited logits between 0.12 and 0.57 because these items were moderately difficult to affirm. Also, Item 25 '*I usually handed my course work in early*' was deemed difficult to affirm with a logit of 1.38. These logits indicate that these are four behaviours that only those students with higher ability to be retained were able to affirm. These findings are significant for the institution concerned because, as stated previously, behaviours have the ability to be influenced or changed. With regard to these four items, the kaiako (teacher) and/or institutional support services could play a vital role in retention. Time management is a teachable behaviour, and therefore it is suggested that the kaiako (teacher)

and/or support services could indeed teach these students time management skills in order for the student to be ahead in course work, to have enough time to complete requirements and to arrive on time to class. If these time management skills were taught to students, data indicate that this could have a positive affect on retention.

C. Ability to manage personal issues

Item 58 '*I was able to fit my life around my study*' scored 0.60 logit indicating that only students with the ability to fit their life around their study will have high retention scores. This is relevant information for all tertiary institutions as this kind of information will need to inform both delivery mode of courses, and support structures of the institution. In order to positively affect retention, an institution needs to ensure that the institution fits around the life of the student, not the other way around. Therefore delivery modes of courses and support structures within the institution need to be tailored to the needs of the students, and in the case of Te Wānanga o Aotearoa to its student population of predominantly adult students, including Māori. This could be done by changing the traditional delivery of courses from day courses that are full time, to weekend block courses, night delivery, or e-learning forums. Support services offered may also need to be tailored to the requirements and needs of students in order for them to be supported to fit life around study and so assist their retention.

Being able to handle personal issues is a behavioural characteristic of students who demonstrate ability to be retained. This is evidenced by Item 20 '*I was able to handle my personal issues*' which scored 0.18 logit, deeming this item moderately difficult to affirm. This could be interpreted to as those students who are able to handle personal issues are more likely to be retained. This is useful information for institutions, because in theory, if an institution could support a student in handling their personal issues, the institution could positively affect retention statistics. Therefore, it could be further assumed that institutions need to offer effective, relevant, and timely support services to students to positively affect retention of this unique demographic. These services are obviously critical for these

students, and the staff who occupy positions within student support services must be aware of the issues facing these particular students and have the ability and resources to assist. These may be distinctive needs unique to these students and the pressure of personal issues may need to be resolved for institutions' retention to be maximised.

D. Intention

Item 22 '*I planned to stay enrolled until the completion of my course*' was the only item that recorded a logit that indicated it was easy to affirm (1.04). This indicates that most students who completed the questionnaire intended to complete the course they enrolled in. This finding is not consistent with current literature that states that one of the largest predictors of retention is how long students plan to stay at an institution (T. Hawley & Harris, 2005-6).

This item is also interesting when it comes to discussions about measures of retention. As was stated in Chapter Two (p. 19), one definition of retention is that retention is seen as achieved if students achieve their objectives for participating (Lenning, et al., 1980; Polinsky, 2002-3). Therefore, a student may enrol in a year programme intending to complete only the first module, as this fulfils the objectives they have.

E. Time on campus

The most difficult student behaviour items for students to affirm were Item 28 '*I spent more time than just class time on campus*'; Item 30 '*I arrived early and stayed after class*'; and, Item 31 '*I spent time on campus outside of class time*'. These items had locations of 1.78, 1.67, and 1.75 respectively. This indicates that these items would only be affirmed by students who demonstrated the characteristics of students with the ability to remain engaged in study, or in other words, to be retained. Interestingly enough, all of these items relate to spending additional time on-site out of class time. The data indicate that retained learners demonstrate the behaviour of spending time other than class time on campus.

Knowing this, if an aim of an institution is to increase the retention, the institution should encourage these students to spend time on campus other than class time.

This may require an institution to modify its current environment and the current services offered in order to encourage these students to spend time on campus. For example, adult students may require child care on site, health service access, cafés and food, entertainment and possibly counselling services to entice them to 'hang out' on campus. This is reinforced by studies such as (Harris, 2006-7) where six elements contributing to the creation of community are discussed that lead to students spending time on campus out of class time. These six factors considered by the institution in this research were weekly devotions, dinner breaks, student secret supporter system, facilitation teaching style, email communication after hours with other students, and having a unifying goal of completion. Though these factors assisted students at the institution involved in Harris's study, it is essential that other institutions research the needs of their own student demographic, and provide services that will encourage and support these students to spend time on campus out of class time in order to positively affect retention.

Pressure

The most difficult item for students to affirm with relation to student attitude was Item 9 '*I did not feel under pressure to complete my course work*'. The logit of 1.08 indicates that only students with the characteristics to be retained would affirm this item. Therefore, it could be concluded that students with the ability to cope with pressure have the best chance of being retained within an indigenous tertiary context. This is a significant finding for most tertiary institutions, as students tend to be put under pressure on a number of occasions during their student experience. It could be assumed that if an institution could control the amount of perceived pressure placed on students, the institution would have an element of control over retention of these students. That is, decreasing the amount of pressure felt might positively affect retention. This finding may be particular to adult students, including Māori, and their busy lives. If pressure is exerted by the institution, it is possible that a student would not be able to cope

and therefore it is suggested that institutions need to be flexible for these learners to be retained. This finding is supported by the literature where it is stated that institutions must be flexible around its learners and their lives. In their study of UK institutions that surpassed government-set retention benchmarks for students from lower-socio economic groups, Yorke and Thomas (2003) found flexible approaches to teaching and processes enhanced student retention. Respondents who never considered withdrawal generally felt teachers were supportive when students needed help, people were flexible, they had a sense of belonging and awareness of how the system worked, and a general feeling that people were helpful. Conversely, students who withdrew were less enthusiastic about teacher support, flexibility, feelings of belonging, and understanding of the system than those who remained engaged. Therefore institutions can reshape practices, processes and systems particularly in relation to timetables and flexible work schedules in order to minimise pressure on the student population, and therefore increase retention.

In a study that examined the issue of why indigenous students left higher education before earning their qualification, Solberg (1993) found three contributing factors that all related to pressure students felt in various areas of their lives that affected their retention ability. These were academic pressure of feeling underprepared, social pressure or family pressure, and financial pressure.

Student retention behaviour – attitude link

As previously stated 70% of all student retention attitude items were easy or moderately easy to affirm, and 30% of items were moderately difficult or difficult to affirm. With regard to student retention behaviour, only 18% were easy or moderately easy to affirm, leaving 82% that were deemed moderately difficult or difficult to affirm. The 19 items about student retention behaviours were harder for students to affirm. Expressing attitudes was easier than demonstrating retention behaviours.

Throughout the data produced by the research, there is an interesting theme of linking the behavioural items with the attitudinal items. The data show

that students who are able to demonstrate items from the *student retention–attitude* scale and reflect this attitude through behaviour measured on the *student retention–behaviour* scale are more likely to be retained. This is an interesting finding as student behaviours are more easily taught, influenced or changed than student attitudes. An institution could indeed influence the behaviour of an students by building on an existing attitude, or assisting the student to create a new behaviour. In theory, this intervention by an institution would have the ability to positively affect that student’s retention. Institutions could do this through bridging courses, additional modules to existing curriculum, or through various student support services such as extra classes or service deliveries.

The data indicate that certain student behaviours are a greater predictor of student retention than certain student attitudes. This is supported by the literature where it is stated that attitudes lead to intentions that lead to behaviours (Fishbein & Ajzen, 1975). Within this research, it has been evidenced that in some cases student behaviour is an extension of a reported student attitude, but that student behaviour carries more weight in the retention debate than student attitude.

It is therefore hypothesised that an institution can indeed positively affect retention by being aware of what student behaviours are demonstrated by students with the ability to be retained. If these student behaviours are not evident in a student, they can be taught, and therefore may positively affect students’ retention ability. This is useful information for many institutions who are looking to increase retention within their student population.

2. Kaiako (teacher) characteristics

Findings showed that kaiako (teachers) have a significant impact on the retention. Quality kaiako (teachers) along with positive relationships between kaiako (teachers) and their students are pivotal to supporting a student’s ability to remain in tertiary education, i.e. to be retained.

Data reported in this study show that kaiako (teacher) characteristics were the second most influential factor affecting retention within Te Wānanga o Aotearoa, which is evidenced in the beta weight (β) of 0.29 ($p < 0.00$). The beta weight is a standardised measure of the association between the two variables of *student retention attitudes and behaviours* and *kaiako (teacher) characteristics*.

The available literature supports this research finding by stating that when student retention is low within an institution, some critical factors related to the kaiako (teacher) should be closely examined, such as the qualities of the kaiako (teacher), and appropriateness of the pedagogy used (Dzokoto, Hicks, & Miller, Spring 2007). This significant finding is further supported by researchers within the field of student retention such as Astin (1993) who identified that teachers with a student orientation had more effect on student outcomes than almost any other environmental variable.

This finding is informative in that, although it is based on adult students, including Māori, it mirrors the findings within literature based on traditional students and/or non-traditional students within mainstream institutions. Data analyses in both phases of the research showed the recurrent emphasis placed on teaching and kaiako (teacher)-student interaction by participants. Through both data collection phases, this factor was perceived as both an enabling and inhibiting factor, depending on the quality of kaiako (teacher) characteristics. It is acknowledged that the job of the kaiako (teacher) is challenging, but this research shows that this factor is crucial to increasing retention within the indigenous context of Te Wānanga o Aotearoa.

Pedagogy and relationships

Kaiako (teachers) characteristics impact on pedagogy, and pedagogy can affect student retention.

After Rasch analysis led to deletion of four items within the scale of *kaiako (teacher) characteristics*, kaiako (teacher) pedagogy was measured by four of the

remaining six items within this scale. Item 42 *'My teacher understood the ways that Māori students learn'*, along with Item 45 *'My teacher was available to talk about personal matters that affected class work'*, and Item 46 *'My teacher recognised the life skills I brought to the classroom'* all had logits below -1.0 and -0.0, indicating that these items were all moderately easy for participants to affirm.

In their study of UK institutions that exceeded government-set retention benchmarks for students from lower-socio economic groups, Yorke and Thomas (2003) found that teachers and their pedagogy were probably a reason for exceeding the benchmarks. The data from this study support these findings. The results in this study have suggested that kaiako (teachers) and their pedagogy are significant factors relating to retention. The data supports the view that kaiako (teachers) have the ability to impact positively or negatively on retention, depending on the quality of teacher and pedagogy they employ, and therefore have a valuable role to play in increasing an institution's student retention rate.

Due to the impact that a kaiako (teacher) can potentially have over a student's ability to be retained or not, it would make sense that kaiako (teachers) need to know that good teaching is important within the lives of students and important to the students' whānau (family) and community as a whole, as well as to the survival and reputation of the employing institution. A huge amount of responsibility and kaitiakitanga (guardianship) is gifted to kaiako (teachers) in their role, and this needs to be clear to the kaiako (teachers), and continually reinforced by the institution.

Kaiako (teachers) also need to understand that the relationship of kaiako (teacher) to student is one of ako (reciprocal learning) – sometimes the teacher, sometimes the learner. This concept of ako (reciprocal learning) needs to be integral in the pedagogy of every kaiako (teacher) working within Te Wānanga o Aotearoa. If this concept is not acknowledged, retention is unlikely to be enhanced. Bishop and Glynn (1999, p. 132) emphasised that power sharing and participation are "fundamental to learning for all students" [and] "power relations cannot change

unless both parties participate". Thus, the role of the kaiako (teacher) in the classroom is central to the process of practising pedagogy and negotiating power sharing in relation to learning. Done well, this relationship building will positively affect retention.

Further to this, acceptance of learners as they are by educators is also a critical aspect of educating adult and Māori students (Jefferies, 1997). In the context of Te Wānanga o Aotearoa, learners are viewed as individuals who have life experiences that should not be ignored in the learning context. Effective kaiako (teachers) recognise and integrate this understanding into their teaching. Usually this leads to more participatory learning where the learner has more opportunities to make a valid contribution and therefore is more likely to be retained. Valuing the learner also includes providing the support necessary for the learner to achieve and experience success (Bishop & Glynn, 1999). This comes about by kaiako (teachers) validating the learners' past experiences and allowing learners to use these experiences when facing new challenges.

From a student's perspective, if something is different from his/her existing knowledge, there is no 'reference point' in which to place the new learned knowledge (Clark, 1995). Therefore it is much more difficult to adapt to the new learning. Consequently, it is suggested that Te Wānanga o Aotearoa needs to identify, acknowledge and then build gradually on student experience and centre the students' learning on their existing knowledge. This concept needs to be taught to kaiako (teachers) and included in the pedagogy of the institution in order to positively affect retention.

This understanding will support one of the strongly recurring themes in the research, that outcomes can be improved where students have a positive relationship with their kaiako (teacher) (Bishop & Glynn, 1999). This theme is supported by both the qualitative and quantitative data produced in this study. The data showed that relationships and relationship building between kaiako (teachers) and their students is a key factor in positively affecting retention. Positive,

professional, reciprocal relationships between kaiako (teacher) and students do have major effects. When relationships are strong and kaiako (teachers) are perceived as approachable and interested, retention will be influenced positively. This is reflected by Nugent (2003, p. 283) who states that “my approach to teaching is based on the idea that ... good relationships are essential to good teaching”. Where good teaching is practiced, retention will be enhanced.

Research conducted by Nikora, Levy, Henry, and Whangapirita (2002) identified that Māori students often had difficulties with adjusting to the teaching and learning skill required for tertiary level. Students can be disconcerted by the characteristics and/or pedagogy of kaiako (teachers) (e.g., at being left to manage their own learning, not matching the style of the learner with the style of delivery, being unapproachable and the lack of help available to them). When the kaiako (teacher)-student connection or the teaching is poor, retention is jeopardised. However, on the positive side, when the relationship and/or teaching are positive, retention can be increased.

This finding within this research is further supported in the literature where it is reported that while unequal power relationships inhibit retention, positive power relationships can positively affect student retention (Bishop & Glynn, 1999). Clearly then, the establishment of positive, reciprocal relationships between students and their kaiako (teachers) is fundamental for students to be retained. As Abbott-Chapman and Edwards (1998), Hall et al., (2001) and Promnitz and Germain (1996) note, caring relationships are pivotal to student success.

The individual whom students see most often in their time with the institution is the kaiako (teacher), so that as the person who controls the learning environment, he/she has much potential to influence a student’s retention, either positively or negatively. Thus the kaiako (teacher) is the one individual within the institution who should know the student best and be able to recognise if the student needs support. It follows then that the kaiako (teacher) has much influence on whether or not the student remains in tertiary study, or whether staying is not

possible, resulting in the early exit of the student. Consequently, the kaiako (teacher) must be seen as a significant factors relating to retention.

Although studies have begun to link kaiako (teacher) pedagogy to student retention, that linkage has yet to be fully explored and tested.

Assessment

Within the kaiako (teacher) characteristics scale, there were only two items that recorded logits indicating that they were moderately difficult (logits of between 0.00 and 1.0) to affirm for participants. These items were both related to pedagogy, and more specifically, assessment. One item was related to assessment and its relevance to course content, and the other item related assessment 'fit' to the personal style of the learner.

Item 37 *'I found the assessment in the course relevant to the course content'* was moderately difficult to affirm for participants and this could indicate that participants felt that in fact assessments given within their course at Te Wānanga o Aotearoa were not relevant to the course in which they were enrolled. This is a relevant finding for the institution. If the institution could ensure that all assessment was perceived to be relevant to the course content for students, the institution might be able to positively affect the retention of its students. Often factors affecting student retention are out of the control of the institution, so to have identified a factor that is indeed within the control of the institution's influence is relevant.

However, there may be some external factors that minimise the ability of the institution to impact this area relating to retention (i.e. to alter assessments to be relevant to the course content). One such external factor that may impinge on the institution being able to adapt its assessments may be that Te Wānanga o Aotearoa is funded by a Government governing body, the Tertiary Education Commission (TEC). The TEC have particular requirements when it comes to approving courses for delivery and this research has identified a possible mismatch

between pedagogy between Te Wānanga o Aotearoa and the TEC. Te Wānanga o Aotearoa delivers pre-approved curriculum within a kaupapa (Māori philosophy) led framework. However, when it comes to assessments, and providing evidence of learning back to the TEC who supply the ongoing approval of programme delivery, there may be a pedagogical disparity. For example, a course on the art of being a Māori orator is currently assessed at Bachelor level through essay format. Another example is of a Raranga (flax weaving) course being assessed through written work. Therefore, the assessment of the course may be seen as not relevant to the course content by the students enrolled in the course, and hence why this item may have proved moderately difficult for participants to affirm, and why this item has potential to negatively affect student retention. Students may withdraw from a course because the assessments do not reflect the course content, and the pressure and/or stress this creates for them.

Item 38 *'I found the assessment in the course suited me'* may have been moderately difficult to affirm for similar reasons. Students enrol with certain perceived realities or expectations of the pedagogy within a course of learning and indeed within an institution as a whole. If these perceived realities or expectations are not met, a student is at risk of not being retained. A student expectation that could be connected to this item and its logit is that all matters of education within Te Wānanga o Aotearoa are connected to a Māori pedagogy. For a student, this would relate to all matters of teaching and learning, including assessments. However, the reality may be that with the governing body guiding the accreditation and ongoing approval to run the course it is not designed to allow freedom around methods of assessing learning within this institutional context. Using the examples above, if a student enrolled into a foundation (entry level) course in any of the Māori arts (e.g., whakairo (carving), raranga (flax weaving), or te reo (Māori language)), they could have perceived realities or expectations to be taught in a practical way, which fits with the kaupapa (philosophy) of Te Wānanga o Aotearoa. Furthermore, an extension of this expectation could be that they would also be assessed in a relevant way, (i.e. practically). However, due to governing body requirements, a high proportion of assessment in these existing courses is written,

highlighting a mismatch between the kaupapa stated by Te Wānanga o Aotearoa, and the reality of the student experience.

Students' perception of relevance or method is associated with their retention. This is evident when students feel that there is a lack of relevance or appropriateness between what is taught and what or how this is assessed (Zepke & Leach, 2005). If a student perceives that the assessment is not relevant to the course content, or not conducted in a manner that suits them, retention is jeopardised.

The fact that both of these items were difficult to affirm, and both related to assessment, may indicate that only those students with the ability to adapt to multiple methods of assessment demonstrate a strong characteristic of having the ability to be a retained learner.

The findings around these two items related to assessment are very significant for Te Wānanga o Aotearoa. The data from both phases indicate that aligning assessment practices with course content and student learning styles could increase retention.

Ultimately, the quality of education provided to students in tertiary education must relate to these unique learners and their needs and expectations. Although within this unique population of students, it is unlikely that educational needs will be homogenous, the forgoing discussion highlights that there is no one universal template that will apply.

3. Whānau (family) features

Adult and indigenous student literature is often shaped by discussions of whānau (family). Whānau (family) is defined as the behavioural manifestation of students that reflects a strong emotional and value commitment to whānau (family) life. This commitment to whānau (family) is reflected in the rhetorical question often asked by Māori – 'What is the most important thing in the world?' and is

answered with 'he tangata, he tangata, he tangata – it is people, it is people, it is people'.

In Māori culture specifically, the whānau (family) is often defined broadly and may include single households, combinations of households, and/or all extended relatives. Many Māori students and adult students in general, have strong ties to their whānau (family), and experience the whānau (family) as a source of emotional security and support. Hernandez (2000) reported the importance of family in the retention of Latino college students. Within this study, the family was described as a source of support and encouragement; however the family also placed pressure on the participants in several ways. Both of these concepts are mirrored within the data reported in this study.

In the Māori culture there is a great deal of obligation and commitment to the whānau (family) and their community, which can lead to difficulties with time management and subsequent feelings of pressure. It can be assumed from the logits of Item 50 '*My community responsibilities did not negatively affect my study*', and Item 51 '*My whānau responsibilities did not negatively affect my study*', that were moderately difficult and difficult to affirm respectively, that whānau (family) responsibilities may impact negatively on retention to a larger degree than community responsibilities. Student responsibility to whānau (family) can negatively impact on retention through such activities as tangi (funerals), child care and care of elderly whānau (family). This is supported in the literature when Jefferies (1997) stated that at times there are expectations and obligations that impact on the ability of adult Māori students to participate effectively in tertiary education due to the emergence of strong feelings of guilt that participation in tertiary education is occurring at the expense of whānau (family) responsibilities and non-attendance at whānau (family) events.

The way around this for an institution is to be able to minimise it, perhaps by providing flexi time, or individual education plans negotiated with the student, their kaiako and whānau (family). Involving the whānau (family) may provide the

whānau (family) with some understanding of the requirements and pressure put upon the whānau (family) member studying, and by doing so provide some reprieve for the student from whānau (family) pressures. If the expectations placed on the student by the whānau (family) are understood and supported, being retained in their study may be a more realistic option for the individual, and therefore the institution's retention rate.

The effect on retention of positive and negative whānau (family) relationships (with parents, partners, and children) was confirmed and reflected in the data. Data show that whānau (family) and the relationships within that whānau (family) are key factors related to retention. This is an important consideration for Te Wānanga o Aotearoa with its adult population that is predominantly Māori. Knowing about the individual's role within the family context may help kaiako (teachers) and the institution to configure their delivery more effectively and support programmes for differing student situations and populations. For adult students (particularly Māori) the ability to remain connected to their whānau (family) is essential to their retention (Tinto, 2006-7).

Therefore, perhaps an indicator as to whether a student will have the ability to be retained is the level of support he or she has from whānau (family). This finding fits with research by West, Hore, Benine, Browne, and Kermond (1986) where the data reported that indeed family support could be an indicator affecting retention, positively or negatively, depending on the quality. The qualitative data also reflected this showing that adult Māori students are likely to consult with friends and whānau (family) for advice about withdrawal. The concern is that whānau (family) are often ill-equipped to deal with these issues. Therefore, to positively affect retention, an institution needs to be able to offer alternatives, or assistance to enhance whānau (family) support. Including the whānau (family) could be a positive move on the institution's behalf. Assisting the whānau (family) in supporting the student positively may positively affect the retention of that student. This support could take the form of student support equipped with counselling skills or contacts, or student counselling services either in the institution

or externally at no cost to the student. Counselling services available within an institution is suggested to be more effective as there is a risk that a student will be intercepted by negative influencing whānau (family) or by the student's own thought processes between a referral to counselling services and the attendance at a session. Furthermore, as students may be dependent on whānau (family) some may need accommodation or financial assistance, or even refuge services to be available in order for them to remain enrolled in their course of study.

In fact, the involvement of whānau (family) in their whānau (family) members' education may be one of the leading factors in their retention in tertiary education because various cultural values, such as whānau (family), are salient.

4. Integration processes and institutional climate

Historically within the literature there has been an undercurrent of an view based on integration; that students should adapt to the institution where they enrol, learning to do things 'as they are done around here' in order to remain. This involves assisting students to 'assimilate' to the new surroundings and the literature historically has suggested providing support, assistance and resources in order for the student to make this adjustment.

Furthermore, it is stated within the literature that indigenous students in mainstream institutions often experience culture loss or culture shock, and see the institutional culture as alien and isolating. Students can feel neglected and can feel a lack of support. The barriers these students face often include a lack of a presence of indigenous issues, materials and role models on campus and a lack of indigenous presence within the curriculum. Also indigenous students can experience teachers having low expectations, staff displaying discouraging and demeaning behaviour, and students experiencing racism and prejudice. From these experiences, the students may resist pressure to be assimilated into the culture of the mainstream institution because they feel it compromises their own cultural value or identity.

This assumption is being challenged in the emerging discourse within the literature where it is suggested that the first step in improving retention rates may be to create an educational environment in which the students want to remain. The emerging view is that instead of requiring students to separate from their old world and their culture of origin, 'dual socialisation' allows minority students' two worlds to converge, enabling them to function effectively and less stressfully in both.

It is clear from the literature that the climate created within an educational institution can have an impact on student outcomes such as retention (Pascarella, et al., 1997; Tinto, et al., 1993). Students are more likely to feel safe, and therefore to achieve, in an affirming and accepting environment. At a time when students are increasingly diverse in the New Zealand tertiary landscape, it is important that institutions create climates that welcome, accept, respect, affirm and value this diversity. Where this does not happen, discrimination in various forms may occur.

Tinto (Tinto, 1987, 1993) believes strongly that student retention depends on a student's level of social integration within the institution's educational community. The level of student interaction, knowledge, and socialization within the institution can dictate the ability to be retained.

Two items that support this were Item 54 '*I liked the Māori cultural context of TWoA (Te Wānanga o Aotearoa)*' and Item 58 '*I felt that being Māori was a positive thing at TWoA*'. Both these items had logits that indicated that they were moderately easy to affirm. According to the literature outlined above, this should not be a surprising result as Te Wānanga o Aotearoa is a Māori led tertiary institution. This means that tikanga (processes) is, and will always be, the core value and guiding principal of the kaupapa (philosophy) steering Te Wānanga o Aotearoa. According to the literature, retention is enhanced by improving the degree of fit between the student population (dominated by adult and Māori students) and the institution itself. Therefore, the matter of integration and

institutional climate should not be a significant factor negatively affecting retention. This is reflected within the data found in both phases of the research.

Even though these items are not significant factors relating to the ability of an institution to increase retention, Item 18 and Item 19 within the scale of *student retention – attitude* and their recorded logits, highlight interesting considerations for Te Wānanga o Aotearoa. Item 18 '*I was aware of tikanga (Māori philosophies and processes)*', and Item 19 '*I had knowledge of Māoritanga (things Māori)*' recorded logits that were moderately difficult to affirm, indicating that these are attitudes of students who have the ability to be retained. Therefore, if a student who enrolls at Te Wānanga o Aotearoa is already aware of tikanga and/or has knowledge of Māoritanga, they are more likely to be retained within this indigenous tertiary context. It may be an interesting consideration for the institution to note, and begin to think about integrating this knowledge into all the induction programmes or curriculum documents in order to increase students' skills in these areas. If this knowledge and/or awareness were integrated at an early stage in a student's tertiary experience, an increase in retention at Te Wānanga o Aotearoa may occur.

Item 35 '*I had opportunities to express my culture within the course*', and Item 36 '*During the time of my study I was aware of kawa (Māori regional practices)*' build on the student attitudes of Item 18 and Item 19 that were also moderately difficult to affirm. These attitudes discussed previously showed that awareness of tikanga and knowledge of Māoritanga are significant factors in positively affecting retention. The student behaviour Item of 35 and Item 36 relate to these student attitudes, showing that the behaviour reflecting the attitude is also significant in relation to retention of these students. Therefore, an institution should encourage the development of the attitudes previously discussed, and encourage behaviour reflecting these attitudes. This may be done through providing opportunity for these behaviours to be contextually evidenced, (i.e. attendance at karakia (prayer) and/or powhiri (welcoming ceremony)). If these opportunities are provided, an institution may positively affect retention.

5. Employment and financial situation

Employment and student's financial situations are described by Tinto (1993) as external factors that can negatively impact on student retention. The National Centre for Public Policy and Higher Education (2002) as cited in Hawley and Harris (2005-6) reports that although family income has increased, the reality is that more family income does not automatically translate into additional dollars to support students' educational aspirations. Students and their families are struggling to keep pace with the rising cost of tuition. The impact of this is that many students need to work as well as study to afford the education they seek (King & Bannon, 2002), and therefore the two factors of employment and financial situations are inextricably linked.

Literature supports this statement by showing that adult and indigenous students are more likely to be employed (Astin, 1997; Braunstein, et al., 2000-1; MacKinnon-Slaney, 1994). The link between retention, employment and financial situations of students is further supported by the data from this study. The quantitative demographic data reported that 72% of the respondents to the questionnaire were employed.

The effects of employment on a student's study is also documented in the literature (King & Bannon, 2002; Pascarella & Terenzini, 1991). Pascarella and Terenzini (1991) reported that there is consistent evidence demonstrating that off-campus employment has a negative effect on retention. However, this study was contradictory in some respects, and showed that employment is not a factor that statistically negatively affected retention. Both the qualitative data and quantitative data showed retention is more likely to be influenced by factors that are 'spin-offs' of employment, not employment itself, such as time off campus, and financial factors.

Within the items contained in the *Employment and Financial Situation* scale, 75% were moderately difficult for students to affirm. These items were Item 59

'Finances did not affect my ability to stay in study'; Item 60 *I felt I had enough money to get me through my study'*; and, Item 62 *'I had the finances to pay for my study'*. All three of these items were connected with finances as opposed to employment. However, it is acknowledged that employment may be a contributing factor to these matters of finance. The three items referred to the students' ability to fund their study, and also the pressure of financial matters external to study. It has been noted by this research that the ability to fund study and financial matters related to study are two separate issues.

Firstly, the ability for students to fund their study appears to be a significant factor relating to retention. This is supported by the fact that Item 62 *'I had the finances to pay for my study'* was moderately difficult to affirm. This is reflected within the current literature where it has been reported that traditional age students from families with larger incomes tend to consider tertiary education as an option more than adult and Māori students, or those from families with lower incomes (Braunstein, et al., 2000-1).

High tuition levels also have a negative impact on student retention (Cabrera, Nora, & Castaneda, 1992; Cabrera, Nora, Castaneda, et al., 1992). This research supports the literature in this regard, as the fourth item was moderately easy for students to affirm. Item 61 *'I had the finances to pay for my study'* was easy to affirm for participants. This may be due to internal institutional policies. Within Te Wānanga o Aotearoa kaupapa (philosophy), it is an expectation that the institution will support students into, and through, the education pathway as much as possible. This includes removing any potential barriers. One potential barrier that historically bars students from entry into tertiary study is that of the cost of tertiary education including course fees.

Cost of tertiary study is often felt more by adult and indigenous students. These students often have a whānau (family) to support, and are cash poor. To support students as much as possible, Te Wānanga o Aotearoa has a 'fee-free' policy, where 75% of courses are available at no cost to the student; (i.e. no tutorial

cost). This fee free policy allows tertiary education to be accessible to students who may not have had access due to financial restrictions in the past, especially indigenous students. Therefore, the item relating to being able to afford the course they want to do may be easy to affirm for participating students within Te Wānanga o Aotearoa due to the 'fee-free' policy. Other institutions wanting to increase the enrolment numbers may need to consider this cost barrier and adapt institutional philosophies and policies to suit.

Secondly, when looking into the financial matters related to study, financial pressure outside of study is a reality for a large number of adult and indigenous students. This finding is supported by the literature (Chenoweth, 1999; Derby & Watson, 2006-7; Reyhner & Dodd, 1995). Item 59 '*Finances did not affect my ability to stay in study*', and Item 60 '*I felt I had enough money to get me through my study*', both related to having enough financial support external to their role as a student in order to allow them to continue, and were moderately difficult for students to affirm. Therefore it could be assumed that only students with the ability to fund their life as a whole while studying show a strong ability be retained. Those students without sufficient funds to fund their life at any time during their study will not have the characteristics to be retained, and their ability to be retained may be jeopardised. This is a significant finding from an institutional point of view. It needs to be understood that there are more costs for a student than just the course fees and traditionally related costs of books, stationary and the like.

When looking into research related to the relationship between financial factors and retention, what is often not taken into account in a great deal of the literature is that there are various forms of 'cost' that a student may incur. There is the most commonly recognised financial restriction (i.e. the cost of the course and/or tertiary fees). However, what is often not considered are the supporting costs such as books, stationary, and transport. Even more importantly, there are some hidden costs as well. These hidden costs might be costs such as childcare or care of other whānau (family members) to make time available to study or attend

class, and/or loss of income as students may have to attend course during hours when they would normally be available to work.

If an institution is committed to increasing retention, then this is an area of student care that needs to be addressed. Considerations such as financial support and/or pastoral support will need to be in place to support students with feeding their family, clothing their family, providing child care, and taking care of other whānau (family) members for example. This is even more important when dealing with a demographic of Māori students and adult students in general, as they are usually the whānau (family) member supporting the rest of the whānau (family), which may include children and/or elderly parents, among others. These students are traditionally charged with earning the money to support the whānau (family) at this stage of their life, and to take time out to study can put tremendous pressure on these students. This is pressure on top of the normal pressure of studying felt by a high proportion of adult and indigenous students and has potential to cause a withdrawal.

This is mirrored within other research in the area of retention. For example Wohlgemuth et al., (2006-7) stated “It is clear from these results that financial aid can play an important role in increasing student retention and graduation, consistent with previous studies” (p. 471). If an institution was to acknowledge students’ costs (both transparent and hidden), and alleviate the pressure that these costs may induce, retention may be increased.

6. Student motivation

Data reported in this study showed that *student motivation* was the most influential factor affecting retention within Te Wānanga o Aotearoa. This is evidenced in the beta weight (β) of 0.33 ($p < 0.00$). This provides a standardised measure of the association between the two variables of *student retention attitudes and behaviours* and *motivation*.

Motivation falls into two categories, internal motivation and external motivation. External motivation involves performing an activity with the intention of obtaining some separate, external consequence. Previous research has indicated that most adult students depend on external motivation. According to research on adult learners, their motivation involves a variety of factors including family goals and desires, job improvement and employment requirement (Slonick, Pelton, Fuller, & Tabor, 1993).

Item 67 '*Other people wanted me to study*' and Item 68 '*My family really wanted me to study*' were both concerned with external motivation. Both these items were difficult to affirm for students, as they elicited logits of 1.12 and 1.07 respectively. Therefore it could be suggested that those whose motivations are externally driven are more likely to be retained.

This does not support the literature where it has been stated that non-traditional students are more intrinsically motivated than traditional students as a result of life experience (Merriam & Brokett, 1997). Other incongruous research shows students who have considered withdrawing, or actually withdrew, gave significantly greater importance to pleasing others as reasons for enrolment (Zepke, et al., 2003). This study did not support these findings, showing that students who are classified with a greater ability to be retained appear to be more extrinsically motivated.

Although in the literature it is often stated that withdrawal is considered when the motivation for study is external, this research suggests that this may only be relevant when the student is a 'traditional' student. In this study the data indicate that for adult students, including Māori, external motivation is significant enough to be a positive factor influencing retention. This may be due to the fact that for these students, investment in tertiary education is seen as a luxury and a 'means to an end' for the individual, whānau (family) and related community as a whole. Therefore, it may be that a great deal of sacrifice (e.g. time and money) is donated to the endeavour of the individual student by the investors (whānau

(family) and/or community), and consequently there is little option of non-completion on behalf of the student bestowed with the responsibility and honour of gaining the knowledge. This is supported by a study conducted by Walker (2000) where it is stated that a key factor in student persistence was family and community-oriented motivations for studying.

Goals and retention

Goals set the framework for eliciting motivation and engaging in cognitive operations which then serve as consciously conceived reasons for behaviour. As stated previously, this research has shown that particular behaviours are a factor that can positively affect retention. Goals act as a governing mechanism that provide a measure for achievement and a feeling of success, as well as a guide for avoidance of failure (Raffini, 1988). Many researchers (Graham & Donaldson, 1999; Knowles, 1984; Tice, 1997) reported that the non-traditional student returns to the academic setting with reality based achievement goals that lead to an increase in goal setting behaviours.

This is confirmed by the data produced by the quantitative phase of the study in that items that related to achievement of goals were easy for students to affirm. These were items within the *student retention – attitudes* scale, Item 13 '*It was important for me to achieve my goals*' and Item 14 '*I wanted to achieve my long term goals*'. From this data we can assume that retention is not jeopardised by students having unclear goals, or no goals on entry to tertiary education. In fact, due to most students being able to affirm these statements it could be understood that the participants did have goals for themselves.

Linking the attitude and the subsequent behaviour, Item 21 from the *student retention – behaviour* scale, '*I achieved my goals*' has a link back to the student attitude items of students wanting to achieve their goals and considering goal achievement important. Both these student attitude items were easy to affirm. Item 21 reported a logit of 0.11 making this item moderately difficult to

affirm, highlighting that the attitude is easier to affirm and the evidential behaviour harder.

Even though the data gathered in this study supports the literature stating that adult students, including Māori, are apt at goal setting, and see achievement of these goals as important, results must be interpreted with caution. There is much conflicting literature and documented retention plans that have stated that inclusion of goal setting for students will increase the chance of retention (Andrade, 2006-7; Wild & Ebbers, 2002; Wilson, 2005-6).

7. Pre-enrolment and induction processes

Induction and orientation

Yorke (1999) found that two of the top four factors responsible for early withdrawal included dissatisfaction with induction into study. Item 71 '*I found the induction informative*' had a difficulty logit of -0.44, because the item was easy to affirm. This value indicates that many students found induction information informative. Alternatively, Item 72 '*I found the orientation programme beneficial*' was moderately difficult to affirm with a logit of 0.04. These results suggest that the induction programme was seen as informative but not necessarily beneficial. Therefore, this finding is not consistent with the literature where it is stated that orientation programmes help academic integration and improve retention (Bailey, et al., 1988; Braxton, et al., 1995; Walker, 2000; Yorke, 1999). Perhaps if Te Wānanga o Aotearoa induction programme was modified, students might report differently and it might have different benefits for students.

Pre-enrolment

Studies show that readily available pre-enrolment advice and academic counselling is likely to assist retention and improve student outcomes (Isaak, Graves, & Mayers, 2006-7). Other works reported by Martinez and Munday (1998), Yorke (1999) and McInnis, Hartley, Polesel, and Teese (2000) McInnis, James, and Hartley (2000) confirm that making wrong choices about programme or courses is a key factor in withdrawal and non-completion for many students. And from another perspective Pitkethly and Prosser (2001) identified lack of enrolment advice as an institutional weakness.

Item 69 *'I always knew it was the right course for me to be doing'* had a logit of -0.56 indicating this item was easy to affirm for students participating in the study. This is useful information for the institution in that the data indicates that students often select the correct course for them. This is a positive finding, as choosing the wrong course can be a major factor in students failing to complete a course. Students need to know what to expect from a chosen course, as those whose expectations are not met are more likely to withdraw.

Item 34 *'I only chose courses that I enjoyed'* was moderately difficult to affirm. This indicates that mainly those students who had the ability to be retained chose a course that they enjoyed. Therefore the fit between the course and the student is an important factor in discussions relating to retention of adult students, including Māori. This finding is supported in the literature that states pre-enrolment counselling is a significant factor in positively affecting retention of students (Isaak, et al., 2006-7; Pitkethly & Prosser, 2001).

Arguably, pre-enrolment could be related to Tinto's (1993) concept of integration. People who are confident that they are studying the right course within the right environment are likely to be successfully integrated into their studies (Martinez & Munday, 1998). But due to this item being easy to affirm, the data shows it is unlikely that this factor is significant when related to factors affecting retention.

Part Two: Propositions about retention in an indigenous tertiary institution

Challenges for practice

We accept that many kaiako (teachers) and institutions already do their utmost to give students a quality experience. However, according to retention statistics, this is not enough as retention remains an ongoing concern for most tertiary institutions. Central to the emerging discourse is the idea that students should maintain their culture of origin, and experience learning that fits with the kaupapa (philosophy) of the institution at which they are enrolled. Content, pedagogy and assessment, for example, should reflect the kaupapa (philosophy) of the institution in which the student is enrolled, as opposed to being dictated by the funding bodies. This will assist students in moving between their 'cultures of origin' and their institutional 'culture of immersion' with less culture loss or culture shock as they will be the consistent (Rendon, et al., 2000). The outcome of this is improved student retention. The challenge is to find ways of adapting and aligning current practice in order for this to occur.

Proposition one: Kaiako (teachers) need retention related training

Numerous studies (including this one) have indicated that an effective kaiako (teacher) contributes positively to student retention. The person who the students see the most in their time with an institution is most likely to be the kaiako (teacher). As stated previously, the kaiako is a key to successful retention. Knowing this, it is proposed that kaiako (teachers) need a set of specific skills in order to positively affect retention.

There is growing recognition that adult and indigenous students learn in different ways from traditional students. Traditional delivery is based on an assumption that a lecture conveys information most efficiently to individual learners. The acknowledgment of differing learning styles now requires a range of alternative ways of teaching and learning. This process has sometimes been

distorted, resulting in the stereotyping of adult and Māori students as kinaesthetic or oral learners. Some researchers refute this stereotyping as simplistic and discriminatory, asserting that alternative ways are examples of best practice that should be seen as important for the success of all students (Abbott-Chapman & Edwards, 1998; Bishop & Glynn, 1999; D. Smith, 1991).

Some institutions such as Te Wānanga o Aotearoa and its kaiako (teachers) emphasise the centrality of the student to the learning process. Within this context, developing and/or restoring the mana (social standing) of the student is a critical part of success. This is particularly applicable to students who have had mostly negative experience in education, usually adults returning to study and indigenous (i.e. Māori). Instilling in these learners a sense of hope, possibility, and achievement provides opportunity for a positive learning experience. Kaiako (teacher)-centred approaches are used to demonstrate and share knowledge in situations where expert input is warranted. Effective kaiako (teachers) also take opportunities to model and reinforce desired learning outcomes. Most adult and Māori learners want kaiako (teachers) who are able to equip them with the skills necessary for advancement. This necessitates that kaiako (teachers) enhance their own personal learning by attending relevant professional development activities, and are sufficiently qualified and/or experienced in their area of delivery.

Several studies also support the notion that where kaiako (teachers) take a nurturing role, improved student retention is achieved, particularly for non-traditional students (Nugent, 2003; Pascarella & Terenzini, 1979). Kaiako (teachers) are kaitiaki (guardians) of the learning process, and therefore should meet the learning needs of all students. This will require flexibility in pedagogy, assessment, workloads, and administrative systems. Kaiako (teachers) need to possess the skills of being able to build cooperative, reciprocal relationships and be open to establishing relationships with a diverse set of students. Kaiako (teachers) also need to be able to provide academic and pastoral care and support for each student according to their needs. This 'knowing' of the students will allow and enhance

monitoring students and permit the kaiako (teacher) to intervene early if necessary to assist retention of students.

Kaiako (teachers) who work successfully with adult students, including Māori, will achieve results in terms of both the students personal development and programme outcomes. These kaiako (teachers) will be able to empathise with these groups of learners and use approaches to recognise and address their learning needs. In some cases, empathy and awareness of the learner's needs requires the learner to be introduced to their culture or have their cultural ties strengthened. In other cases, reversing a history of failure by assessing the learner in ways that are relevant to both the student and the course content will be most effective.

In order to include these key skills in staff practice, internal and/or external training may be required and should be strongly encouraged by the institution. A mentoring system amongst staff would also work well, and would fit with the Māori learning concept of the tuakana/taina model (oldest supporting the youngest). The desired outcome would be to have principles of adult education and indigenous education either deliberately or naturally incorporated into pedagogy. It is suggested that inclusion of this type of training around key skills would provide the kaiako (teachers) with useful tools to positively affect the retention of students within their care.

Particular quality challenges in the tertiary sector are, as in business, born of resource constraints. Time and money are both critical, and more often than not, rare resources. Particular challenges include the development of professional competence where there are conflicting needs, including meeting student expectations while recruiting credible academic staff. Pedagogical expertise may not always be a criterion for selection of staff, particularly where it is assumed that well-designed courses are the most important factors for learners, or that higher educational expertise on entry is sufficient training for kaiako (teachers). However, careful recruitment of staff and a sensitive staff orientation programme should be

backed up by a staff development programme. Kaiako (teachers) development needs to reflect an academic orientation by expounding the need for critical reflection rather than training for practitioners.

Proposition two: External motivation for kaiako (teachers) will improve student retention

The data from both qualitative and quantitative phases of the study support the notion that kaiako (teachers) are the key factor in retention. Therefore, it seems obvious that institutions need to value good kaiako (teachers). How they do this will be up to the individual institution and its value base.

It is often the case that most institutions do not align their reward systems to the goal of enhanced student retention. It is one thing to talk about the importance of increasing student retention, while it is another to invest scarce resources and adopt institutional kaiako (teacher) and staff reward systems that promote the behaviours that would reinforce that goal. It is often stated that while many departments are willing to publically proclaim the importance of retaining each and every student, the promotion processes do not recognise retention and instead value research grants and publications. Unless the education and retention of students is rewarded, many kaiako (teachers) will only give it 'lip service'.

In view of the fact that the kaiako (teachers) are in positions in which they can positively contribute to the retention, it is suggested that institutions need to look at what incentives are offered to kaiako (teachers) in order to externally motivate them to increase retention.

Institutions that value their kaiako (teachers) could provide opportunity for professional development activities. This may include opportunities to attend training or conferences that assist kaiako (teachers) in developing new techniques in working effectively with diversity. This may inspire and motivate kaiako

(teachers) and give them the support and motivation they need in order to positively affect the retention of students.

Institutions also might consider implementing workload policies that enables kaiako (teachers) to cater for students' diverse learning needs. This can be seen as a generous move by the institution towards kaiako (teachers), and externally motivate and encourage staff to retain their students. Also the workload policy may contribute to allowing kaiako (teachers) the space to research within the area of teaching, which could lead to the implementation of new techniques and the flow on effect of positively affecting retention.

Other methods of externally motivating kaiako (teachers) might include a reward for being an effective kaiako (teachers). This reward scheme could include such things as access to promotion, or performance based bonus systems. It is suggested that these forms of incentives can provide kaiako (teachers) with the external motivation to implement techniques with their students that will result in enhanced student retention.

It is further suggested that some weight in the kaiako (teachers) reward structure should be given to staff members who use teaching practices that foster the retention of students in tertiary education. If external motivation strategies are introduced by an institution around quality teaching and the retention of students, these two areas should be increased.

Proposition three: Improved student retention requires a change in institutional culture

Institutional climate

Over the past several years there has been a change in the way students engage with their tertiary education provider, and students increasingly expect the institution to fit with their lives rather than the other way round. Although much of the literature supports the notion of student integration, there is an emerging view

in recent theoretical and empirical studies that supports the idea that, rather than requiring the student to adapt to the institution's culture, the institution should also adapt to the cultures of its students.

Reasons for this trend include the greater proportion of full-time students who also work, whose social life is not connected with the university, and whose lives and study are influenced by new technologies. Institutions can meet these students' needs by reshaping university practices, particularly in relation to timetables, delivery modes and flexible schedules. Students arrive at an institution with a particular culture (defined, for example, as habits, manners, lifestyle preferences, interpersonal skills, culturally specific learning tools, and so on). Where a student's cultural beliefs and values fits with the institutional culture, the student is more likely to be retained, but where the culture is not valued or accepted, or not congruent with the institutional culture, the student will find it harder to remain.

This transformation of an institution needs to affect the social, academic and institutional levels of culture. It involves transforming the norms, values, practices, beliefs and assumptions that guide the behaviour of individuals and groups within the institution, and includes changes to faculty appointments, pedagogy, curricula, and assessment, as well as changing the relationships between people in all sectors and at all levels of the organisation. For example, enrolment processes and the provision of advice on finances, course timetables and general administration procedures can have an impact on student satisfaction and persistence. Where these processes go smoothly, they can have a positive effect on retention, but if there are difficulties, the experiences can lead to students feeling alienated and dropping out.

Institutions which accept differences, which adapt or change their institutional culture to get a better 'match' with students' cultural and social backgrounds, and which make minority achievement and diversity part of their core values, are more likely to have positive student retention. In this study, it is

suggested that it is possible to foster the two different institutional cultures simultaneously, with students operating across both – that is, for institutions to value the students’ ‘culture of origin’ while helping them to integrate into the new academic ‘culture of immersion’. This could be beneficial for an institution such as Te Wānanga o Aotearoa that sometimes needs to staircase students into further education within other tertiary providers, that is guide them to the next level within their chosen area of study.

Institutions can also help improve learning outcomes for students if they meet student learning preferences – that is, institutions need to adapt to their students rather than expecting the students to adapt to the institutions. For example assessment alignment is an issue highlighted by this study. Students’ perception of relevance or method is closely associated with their levels of satisfaction and their academic achievement, particularly when students feel they are over-assessed or there is a lack of relevance or appropriateness between what is taught and what or how this is assessed. Te Wānanga o Aotearoa will need to adapt assessment practices to align with the culturally-oriented pedagogy of the institution. A way forward may be to respect cultural values and beliefs invested in oral and communal practices by including oral and group assessment options as opposed to subscribing to western intellectual hegemony.

Inextricably linked to classroom pedagogy is the diversity of teachers themselves. Diversity amongst staff is often referred to as an important factor in supporting non-traditional students. Smith (1991, p. 5) says that it is not enough to provide (minority) role models; rather, institutions must take seriously the need for power to be “shared by a diverse mix of persons ... at all levels and in all dimensions”. In addition, Smith’s research urges institutions to retain and develop minority staff, to overcome their sense of isolation and alienation and to actively seek the benefits of intellectual and social diversity. Thus diversity may become embedded in the culture of the institution through the diversity of relationships it encourages amongst its individuals.

Several studies indicate it is important for students to be assimilated into an institution's general social milieu. If students have a sense of belonging, it can help them make a successful transition into higher education, and contribute to their ongoing commitment and their academic achievement. It also makes sense that since the whānau (family) appear to have a part to play in keeping the student enrolled, inclusion of the whānau (family) in the environment would be beneficial and positively affect retention. This may occur through family open days, whānau (family) being encouraged to attend class with their family member, or whānau (family) encouraged to spend out of class time on campus. This whānau (family) involvement may support the student in tertiary study, and support that student's ability to make friendships with others, and so to be retained.

Students need to establish good friendships and personal social networks. Activities which help students form social networks include attending performances on campus, doing volunteer work, group class work, group assessments, and taking part in study groups. Institutions can support effective social integration by providing suitable facilities and events that will enable students to make friends, and by providing special courses such as study groups that will help students meet people and ease their transition into the institution.

Te Wānanga o Aotearoa in particular places emphasis on ensuring that Māori learners have the opportunity for experiences that strengthen cultural and personal identity. A strong sense of self enables the learner to engage meaningfully with his or her own environment. This engagement benefits both the individual, the whānau (family), and the community as a whole.

Definitions of success

Recognising and valuing the learners as directors of their own learning is a significant starting point, taking into consideration definitions of success and motivation. At an institutional level, policies and procedures should be put in place to collect, track, and monitor students' goals and definitions of success.

Identifying students' goals during the enrolment process, and tracking those goals throughout their enrolment could help institutions sketch a clearer picture of how to operationally define retention within the institutions uniqueness, and ultimately what it means to be successfully or unsuccessfully retained within that context.

As highlighted previously in this discussion, if there is not a match between students' definitions of success and the institution's definition of retention, there will more than likely be a lack of retention. If however the institution aligns its definitions of retention with student definitions of success, positive retention will occur. For example, a student who is not retained until course completion, but is retained after they fulfil their objectives could be deemed retained if the institution's definition reflects the meeting of individuals' initial objectives as retention. If this alignment is implemented by an institution, retention will be a more accurate measure of success for the individual students and a more accurate measure of success for the institution as well.

Proposition four: The measurement of retention attitudes and behaviours could provide data essential for increasing retention

As demonstrated by the sometimes conflicting findings in the literature, studying student retention remains difficult and complex. Though extensive research efforts have been used to develop and improve theoretical models of student retention, retention continues to be an issue for many tertiary institutions. The efforts to confirm theoretical models to predict student retention are incomplete, and much of the variation in retention rates among students remains unexplained. Creative solutions are therefore required to meet the challenge of retaining the growing number of adult students, including Māori, within the tertiary landscape.

In response to research on student retention, tertiary institutions have developed several intervention programmes to increase their retention rates. Institutional researchers often use early warning systems and inventories to assess student needs when they enter the institution (Hoyt, 1999). If students are identified as high risk on the inventories, they are given additional assistance such as study skill seminars, and orientation sessions to link them with student support services. Although this is an acceptable approach by many institutions, the major problem is that this approach is reactive in some ways. The students are often already enrolled and engaged in learning. Often the early warning systems do not highlight an issue with a student and their retention until it is too late to intervene. Once the information deemed a warning (e.g. absence from class, or failed/failing grades) reaches the right staff member, chances are that the student may already have withdrawn, and the opportunity for the institution to support the student has passed.

The answer to the retention mystery may lie not in a reactive approach of trying to support students once enrolled, but a more proactive approach of highlighting any potential risks prior to entry. Taking this approach would be beneficial because many studies have stated that retention is often affected by factors outside an institution's control. Therefore an early warning system prior to entry that identifies the possibility of future factors affecting an individual's ability to remain may give the institution time to react proactively, and therefore increase student retention.

The development of such a proactive model could be used to identify a set of variables that would, at the time of enrolment, maximise the institution's ability to predict the probability of retention for each student. This would be useful information for the individual and the institution. The model could focus upon the ability to predict as early as possible in the recruitment or enrolment process the probability of a student being retained. Taking this idea further, with relation to this study, the development of a psychological model of adult student retention

(including Māori) is an intriguing and potentially fruitful approach, and one that is likely to culminate in successful intervention strategies.

The possibility of creating a diagnostic tool based on *student retention attitudes and behaviours* could result in the development of an early warning system for the institution, assisting in increasing retention. An instrument similar to the one developed for this study could well be the basis of such a diagnostic tool. The items have been validated, and by-and-large, were effective. This tool could identify significant predictors of retention and relate these to individual students, producing an indicator of their ability to be retained, and highlighting any potential areas of risk. From this information the institution could put interventions in place around the areas of concern, or where the students are shown to be 'at risk', aiming to increase the students' capacity to be retained.

This instrument could play an important diagnostic role in identifying students who are at risk of not being retained, enabling the institution to focus resources on those students most likely to benefit from prevention interventions, such as new behaviours. The earlier the interventions are put in place to exert causal force on the aforementioned outcomes, the more the interventions are likely to be successful.

The identification of vulnerable students requires a statistical model based on the attitudinal and/or behavioural characteristics of students with the ability to be retained. Such a tool could then be routinely used to identify 'at risk' students at a very early stage, such as the pre-enrolment phase of the enrolment process.

The tool developed could provide an early warning signal to the institution around the likelihood of a student remaining engaged or a student who has the potential to withdraw. It is hypothesised that application of the tool would result in significant improvement in retention rates within the context of Te Wānanga o Aotearoa. This tool would exhibit a high level of consistency when applied specifically to Te Wānanga o Aotearoa for which it was designed. The same level of

consistency may not be achievable at other institutions. This has been demonstrated in the literature when various applications of the Tinto model (1975, 1993) revealed relational differences conditional on the characteristics of the institution, including type, size, and situation.

The question leading the development of this tool could be: “Can a diagnostic tool addressing attitudinal and/or behavioural factors identify ‘at risk’ students in order to increase retention within an indigenous context?”

It could be hypothesised that:

1. Individual differences in attitudes and/or behaviour items will predict retention ability of individual students; and
2. Scores in relation to the attitude and behaviour tool are directly related to retention ability.

As previously identified in this discussion chapter, an institution can influence student attitude to some degree, and student behaviour to a larger degree and therefore the institution has the ability to increase their own student retention.

The goal of using the model in future years to predict the probability of each enrolling student being retained is dependent on the model being stable over time. It is desirable to have a model that displays a high predictive validity or stability over time.

Recount

There have been four propositions outlined that have the ability to positively affect the retention. None of these options will be easy to plan or to implement, and all involve investment of resources. Yet each has its own role in constructing a seamless student retention system.

Summary

This chapter, Chapter Six contained two sections. Firstly, discussions around each of the seven variables in which findings were related to the previous research findings and the current literature. Secondly, four propositions derived from the findings of the study were outlined for consideration.

Ka tō he rā, ka rere he rā

As one sun sets, another rises

CHAPTER SEVEN

RESEARCH QUESTIONS AND FUTURE RESEARCH

Overview

This Chapter, Chapter Seven, consists of two sections. The first section addresses the five research questions that guided this research. The second section offers suggestions for future research directions.

Responses to the research questions

Research Question One

Can interval scales be constructed to measure variables such as student retention attitudes and behaviours and also the factors which influence these?

Interval level scales were constructed for the seven variables. An interval scale is “a measurement scale in which the value of the unit of measurement is maintained throughout the scale so that equal differences have equal values, regardless of location. The 0 point on an interval scale is often regarded as arbitrary or pragmatic, rather than absolute” (Bond & Fox, 2001, p. 230). Logits are “the unit of measurement that results when the Rasch model is used to transform raw scores obtained from ordinal data to log odds ratios on a common interval scale. The value of 0.00 logits is routinely allocated to the mean of the item difficulty estimates” (Bond & Fox, 2001, p. 231). For each of the seven variables the measures of person affirmativeness (logits and item difficulty) (logits) were plotted on common scales. These are illustrated by the person-item threshold distributions presented in Figures 5.3 to 5.9.

Research Question Two

How do the item difficulties as measured in logits qualify the nature of retention variables?

For each of the seven scales the data from the respective items were analysed using RUMM2020 and the respective difficulties of the items were estimated in logits. The item difficulties were presented in Table 5.7. Further, the item difficulty locations were discussed in detail in Chapter Five. This discussion qualified the constructs underpinning the variables and measured by the scales.

Research Question Three

What are the influences on the student retention attitudes and behaviours of adult students, including indigenous, within an indigenous tertiary institution?

Multiple regression analysis was conducted using SPSS. The model tested specified *student retention attitudes and behaviour* as the dependent variable, and *kaiako (teacher) characteristics, whānau (family) features, integration processes and institutional climate, employment and financial situation, motivation and pre-enrolment and induction processes* as the independent variables. The independent variables accounted for over 60% of the variance in the dependent variable. The *kaiako* variable and the *motivation* variable both had beta weights that were high (β respectively 0.29 and 0.33) and were statistically significant. These findings provide evidence of the influence of these factors on *retention attitudes and behaviours*.

Research Question Four

Is the variance in student retention attitudes and behaviours attributable to a student being Māori or non-Māori?

Analysis of variance was conducted using SPSS. The independent variable was *student ethnicity* (Māori or non-Māori) and the dependent variable was *student retention attitudes and behaviours*. There was no evidence of a statistically

significant between these variables ($p > 0.05$). Additionally the strength of the association was weak (Eta squared = 0.05).

There is insufficient evidence to positively answer Research Question Four.

Research Question Five

Is the variance in personal, institutional, social, and environmental factors postulated to influence student retention attitudes and behaviours attributable to a student being Māori or non-Māori?

Analysis of variance was conducted using SPSS. The independent variable was *student ethnicity* (Māori or non-Māori) and the dependent variables were *kaiako (teacher) characteristics, whānau (family) features, integration processes and institutional climate, employment and financial situation, motivation and pre-enrolment and induction processes*. The only statistically significant association was between ethnicity and integration ($F = 2.70$, $p < 0.05$) but the strength of the association was weak (Eta squared = 0.07).

There is insufficient evidence to positively answer Research Question Five.

Directions for future research

As student retention in tertiary education continues to be a focus for institutions nationally, the retention of adult students, including Māori, becomes an issue of greater concern because of the projections regarding the enrolment increases of these students within New Zealand's tertiary education landscape. If these projections hold true, it is imperative that tertiary institutions learn and understand how to retain these students to remain viable within the tertiary landscape.

This final phase of the research project offers a unique opportunity to contribute to the knowledge of the research community about what should happen

next. The findings of the study have indicated a number of possible suggestions and recommendations that can be adopted for future research. This final discussion is split between four sections. These sections are student voice, kaiako (teachers), whānau (family) features and pressure.

Student voice

With regards to future research and the methodology employed, it is suggested that the area of retention may profit from a more grounded view of retention in which generalisations are drawn from the perspective of participants in the research in order to understand the phenomena under study. That is, we must continue to seek understanding of students' experiences from their perspective, and conduct further research to achieve greater understanding of retention, rather than employ a purely theoretical base. Such a view emphasizes a 'student-centred' approach to understanding of retention within the tertiary landscape. Key to this view is the concept of human agency – people exercising control over their actions. As Bandura (1997, p. 3) explains, "based on their understanding of what is within the power of humans to do and based on their own capabilities, people try to generate courses of action to suit given purposes". Without actually engaging with the students who are retained, we do not know what their purposes are, or how they and their interaction with the institutional environment led to their being able to be retained. We must continue to seek understanding of students' experiences from their perspective, and conduct further research to achieve greater understanding of students' transition and transformation as they move through the educational landscape.

The literature to date that is based in theory rather than in student voice does not provide institutions with, at least not directly, what they can do to help students stay and succeed. Unfortunately, current theories of student leaving are not well-suited to that task. This is the case for several reasons not the least of which is that current theories of student leaving typically utilize abstractions and variables that are, on the one hand, often difficult to operationalise and difficult to

translate into forms of institutional practice, and on the other, focused on matters that are not directly under the immediate ability of institutions to influence.

The following two areas of possible future research can be operationalised by an institution, and are also within the institution's control. Therefore, they may be influential in the effort to increase retention.

Kaiako (teachers)

In the quest for strategies to face the challenge to retain Māori students, and adult students in general, a lesson to take from this research is the notion that effective kaiako (teachers) and appropriate pedagogy are imperative to retention. Therefore, it is important to bring empirically based and statistically sound approaches into the process of kaiako (teacher) development.

Two areas, among many, that are avenues for further exploration are derived from this research. The effects of kaiako (teacher) pedagogy upon student retention and the impact of institutional investment in kaiako (teachers) and kaiako (teacher) development programmes on those outcomes are avenues, as outlined in the propositions within Chapter Six.

Regarding the area of pedagogy, this research highlights that kaiako (teachers) actions, especially in the classroom, are critical to institutional efforts to increase retention. Yet we know little about the ways in which investments in differing types of kaiako (teacher) development programmes or incentive processes impact on rates of student retention. There is more research to be done in this area especially with regards to pedagogy, and assessment practices used. With regards to institutional investment in kaiako (teachers), it appears that too few institutions appear willing to commit needed resources or incentives to address this deeper structural issue that this research highlights as having a significant impact on retention. Though we have begun to link kaiako (teacher) pedagogy to student retention and therefore by inference to the importance of kaiako (teacher) development, that linkage has yet to be fully explored and tested.

Whānau (family) features

This research highlights that knowing about the role of whānau (family), and the student's role within that whānau (family) may help an institution to more effectively configure their support programmes for differing student situations and populations. However, current research does not tell the institution either how to effectively tap into issues of family context or whether such actions, relative to other possible actions, are more likely to yield the outcome of increased retention that is desired.

Results from this research suggest that the whānau (family) and home environment can be utilised as an effective retention tool by familiarising whānau (family) with the institution and providing them with an opportunity to meet and develop a rapport with staff. Future research may look into the role of the whānau (family) within the student's educational experience, and how the institution can capitalise on this knowledge to increase the ability for the student to remain retained in study. An example of this may be to research whether an orientation programme offered to the whānau (family) so they better understand the institutional environment, and the academic expectations that will be placed on their whānau (family) member, has the ability to increase retention.

Pressure

Few empirical studies have focused on the effect of pressure on the retention of students. There has been research that focused on perceived stress and its effect on retention, but very little regarding pressure, and even less on the study of perceived pressure felt by adult students, particularly Māori. Future research should identify factors that contribute to the feeling of perceived pressure of these groups of students, and characterise strategies used to cope with this pressure. Feelings of perceived pressure were identified within the discussion chapter and related to a number of factors, such as kaiako (teachers), assessment, whānau (family), and financial factors.

The findings with regards to pressure provide some insights into pressure in relation to retention, although more investigation is needed. It is suggested that the matters related to feelings of pressure are magnified for the adult student population, including Māori, as their responsibilities and commitments to whānau (family) and community can be more substantial than those of the traditional age student. It may be that pressure is an overarching factor that has the ability to negatively affect retention. If research is able to identify the effect of pressure on retention, and the causes of the pressure, an institution may be able to implement strategies and put support systems in place to relieve this pressure, and subsequently increase the ability of students to be retained in tertiary education.

Concluding observations

A key observation from this research is that the early research into retention resulted from perceptions of the shortcomings in the other models that were being promulgated around the world. It appeared that retention was a limiting concept that did not acknowledge the individuality of the students in question, or the institutions' uniqueness in which the students were based.

Whilst a certain degree of student attrition is inevitable in any tertiary environment, the current levels evident in Te Wānanga o Aotearoa statistics are an ongoing concern. This study highlights the need for a paradigm shift in current ways of thinking and practice about factors that affect the retention of Māori students, and adult students in general. The findings suggest a need for the implementation of a new approach to transformative education, discursive pedagogical practices and the development of reciprocal, power sharing relationships, if Te Wānanga o Aotearoa is to begin to address their student retention issue. Indeed, what is needed is a change in the discourse from a deficit focus on retention, to one of acknowledgment of the power of relationships and pedagogy in student success within an indigenous institution. As we develop a consciousness around these issues we will begin to address the very issues that lie at the heart of retention.

In terms of retention within this unique tertiary environment of Te Wānanga o Aotearoa, this research is timely, and has the capacity to redirect the institution's thinking in terms of retaining their unique demographic of students, which can lead to an enhanced educational experience for the students, their families and communities, the institution, and the New Zealand tertiary landscape as a whole.

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Appendices

Appendix A: Information sheet for focus group

Te Wananga o Aotearoa

The information sheet is to be printed on University letterhead.

INFORMATION SHEET

Title of Project: Factors affecting the retention of indigenous adult students within an indigenous tertiary institution

Researcher: Adelle Wiseley
Te Wananga o Aotearoa
Contact number: 0800355 553 or 021 675 190
E-mail: Adelle.Wiseley@twoa.ac.nz

Tena koe,

With the support of Te Wananga o Aotearoa and Curtin University I am conducting a study about indigenous adult student retention in an indigenous tertiary setting. I will be looking into the factors that assist indigenous adult students to remain in tertiary learning, and the factors that influence the decision of these students to withdraw from study. This research is important as it will affect the services and facilities created to support indigenous adult students in this tertiary environment in the future.

If you agree to participate in this focus group, you will be asked to meet with a researcher and seven other participants to informally discuss factors that you feel affect the ability to remain enrolled in tertiary study, and those that influence withdrawal. This information will be used to create a questionnaire for delivery on a wide scale to other Wananga students to gauge what factors identified affect the majority of other students. The audio recorded session will last for no longer than 60 minutes and will take place in Hamilton in a private room at a prearranged time. **Prior to this session a lunch will be provided for all participants as well as a koha.**

The discussions will be used for research purposes only. The discussions will be kept strictly confidential, with access to the audio recordings for principal researcher reference only and your name will not be used in any documentation or reports at any time.

If you agree to participate, you are able to withdraw from the process at any time and without giving reason. There will be no negative consequences for withdrawing from participating in the study. This research has been through the ethics boards at both Te Wananga o Aotearoa and Curtin University of Technology, and has been granted by both.

If you are willing to participate in a focus group for this research, please sign and return the attached consent form. You will also need to provide me with contact details on the consent form so that I can contact you to arrange hui (meeting). If you have any further questions about this study, please contact me directly via phone or e-mail.

Sincerely,

Adelle Wiseley

Appendix B: Consent for focus group

Te Wananga o Aotearoa

The information sheet is to be printed on University letterhead.

INTERVEIW CONSENT FORM

Title of Project: Factors affecting the retention of indigenous adult students within an indigenous tertiary institution

Name of Researcher: Adelle Wiseley

Note: This consent form will be held in secure storage for a period of 5 years, after which it will be securely destroyed.

1. I confirm that I have read and understand the statement for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I consent to an audio tape being made of the focus group of which I am a participant with the researcher, to be used for reference by principal researcher only.
4. I agree / do not agree (delete as applicable) to take part in the above study.

Date:

Name:

Signed:

Phone number/s:

E-mail:

Please retain one copy of this consent form for your records and return one copy in the stamped addressed envelope provided. Thank you.

Appendix C – Qualitative semi structured questionnaire

Te Wananga o Aotearoa

Name of researcher:

Date:

Attendees:

Karakia timatanga (opening prayer):

Interview:

Educational and family backgrounds:

What previous experience has your family had in education?

Probes: Has any family studied before? Level? Where? Outcome?

Decision to attend tertiary education:

What influenced you to study?

Probes: Job advancement, family, career options, bored, interest? Did you need to study to receive government assistance? Did you study to role-model for your children? Required for current job?

Change of status within whanau/community?

Why did you choose TWoA to study?

Probes: Was it the kaupapa? Being a Maori led tertiary institution? Easy entry criteria? Word of mouth/reputation?

Experiences in tertiary education at TWoA in 2006

Probes: How did you find studying with TWoA? What did you like, dislike?

Factors affecting decisions to persist or withdraw

Probes: Did you think of withdrawing at any stage? Did you withdraw? And what factors influenced this decision? Did you stay, and what factors influenced this decision? What factors made staying possible/impossible?

Karakia Whakamutunga (closing prayer)

Appendix D – Pilot questionnaire and initial indicators

Student Behaviour:

- I was able to handle my personal issues
- I achieved my goals
- I planed to stay enrolled until the completion of my course
- I was flexible while studying
- I was able to deal with new tasks easily
- I usually handed my coursework in early
- I was usually ahead in my course work
- I had enough time to complete my course requirement
- I spent more time than just class time on campus
- I arrived on time to class
- I arrived early and stayed after class
- I spent time on campus outside of class hours
- I discussed course material with my classmates before and/or after class
- I attended class regularly enough to meet the minimum attendance requirements of the course
- I only choose courses that I enjoyed
- I had opportunities to express my culture within my course
- During the time of my study I was aware of kawa (Māori regional practices)

Student Attitude

- I was not anxious about studying
- I believed that I could cope at a tertiary level of study
- I was determined to succeed
- I believed that I could/would succeed
- I believed that I was smart enough to pass
- I believed I could understand the work required in the course
- I did not think about my finances a great deal
- My values matched that of the institution
- I did not feel under pressure to complete my course work
- It was easy for me to make friends with other students
- I enjoy bonding with other students and sharing experiences
- I saw attending class as important to success
- I thought about my goals everyday
- I wanted to achieve my long term goals
- It was important to me to complete my course
- I was responsible for course success or goal achievement
- I felt comfortable in a Māori environment
- During the time of my study I was aware of tikanga (Māori philosophies and processes)
- During the time of my study, I had knowledge of Maoritanga (things Māori)

1: Teachers

1. I had contact with my teacher outside of class hours
2. My teacher was very student centred in their approach to teaching
3. My teacher was what got me through the course
4. My teacher developed positive working relationships with students
5. The teacher gave me good support
6. My teacher understood the ways that Māori students learn
7. I liked the learning environment created by TWoA
8. I had a close relationship my teacher
9. My teacher was available to talk about personal matters that affected class work

2: Whānau and community

1. My whānau responsibilities did not negatively affect my study
2. I have positive role models in education
3. My whānau support helped me stay at TWoA
4. I believe that support is given to Māori students at TWoA
5. I received support from my employer with regards to completing my study
6. I had support from whānau
7. My community responsibilities did not negatively affect my study
8. My community and/or friends support helped me stay at TWoA

3. Assimilation and institutional culture

1. I felt welcomed at TWoA
2. I felt that being Māori was a positive thing at TWoA
3. I did not feel lonely at TWoA
4. I felt that I was learning in a Māori environment
5. I felt like I belonged at TWoA
6. I liked the Māori cultural context of TWoA
7. I was able to fit my life around my study

4. Economic factors

1. I felt I had access to enough money to get me through my study
2. I felt that my work did not interfere with my study
3. I was able to afford the course I wanted to do
4. I had the finances to pay for my study
5. Finances did not affected my ability to staying in study

5. Motivation

1. I wanted to study at a Māori tertiary provider
2. I was internally motivated to study (as opposed to externally)
3. Other people wanted me to study
4. My life experiences influenced my course choice
5. I wanted to study so I could work with Māori people in particular
6. My family really wanted me to study

6. Pre-enrolment – academic integration

1. I talked to people about what course to do before I enrolled
2. I found the orientation programme beneficial
3. I found the induction informative
4. The course I enrolled in was what I thought it was going to be
5. I always knew it was the right course for me to be doing

Appendix E: Information sheet to accompany questionnaire

Te Wananga o Aotearoa

The information sheet is to be printed on University letterhead.

INFORMATION SHEET

Title of Project: Factors affecting the retention of adult students within an indigenous tertiary institution

Researcher: Adelle Wiseley
Te Wananga o Aotearoa
Contact number: 0800355 553 or 021 675 190
E-mail: Adelle.Wiseley@twoa.ac.nz

Tena koe,

With the support of Te Wananga o Aotearoa I am conducting a study about indigenous adult student retention in an indigenous tertiary setting. I will be looking into the factors that assist indigenous adult students to remain in tertiary learning, and the factors that influence indigenous adult students to withdraw from study. This research is important as it will affect the services and facilities created to support indigenous adult students in this tertiary environment in the future.

The questionnaires will be used for research purposes only and will take less than 15 minutes to complete. The questionnaires are anonymous and the content will be kept strictly confidential. The data files into which the questionnaire information will be entered will be maintained electronically with password protection for 5 years after which the files will be destroyed. Questionnaires developed for the study and completed by the participants will be destroyed at the conclusion of the study at the end of 2008.

If you agree to participate, you are able to withdraw from the process at any time and without giving reason. There will be no negative consequences for withdrawing from participating in the study. Also, since Maori have an oral tradition, as a participant you do have the option to deliver your answers orally. Please contact me directly if this is the case, my contact details are at the top of this letter.

If you are willing to participate by completing a questionnaire for this research, please complete and return the questionnaire in the pre-paid envelope. If you have any further questions about this study, please contact me directly via phone or e-mail.

Sincerely,
Adelle Wiseley

Appendix F – Quantitative questionnaire

Factors affecting the retention of indigenous adult students within an indigenous tertiary institution: Student Survey

Thank you for taking part in this survey. Your responses will provide valuable information about factors that affect the retention of Adult / Adult Māori Students within Te Wānanga o Aotearoa.

Please answer the following questions by ticking the option that applies to you.

SECTION A:

- | | |
|---------------------------------|---|
| 1. Gender | <input type="checkbox"/> Male |
| | <input type="checkbox"/> Female |
| 2. Age bracket | <input type="checkbox"/> 26-40 |
| | <input type="checkbox"/> 41 – 50 |
| | <input type="checkbox"/> 51 – 60 |
| | <input type="checkbox"/> 61 and over |
| 3. Ethnicity | <input type="checkbox"/> Māori |
| | <input type="checkbox"/> NZ Pakeha |
| | <input type="checkbox"/> Pacific Island |
| | <input type="checkbox"/> Asian |
| | <input type="checkbox"/> Other |
| 4. Did you work while studying? | <input type="checkbox"/> Yes |
| | <input type="checkbox"/> No |
| 11a. If yes, paid or unpaid? | <input type="checkbox"/> Paid |
| | <input type="checkbox"/> Unpaid |
| 11b. Part time or full time? | <input type="checkbox"/> Part |
| | <input type="checkbox"/> Full |

	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I was not anxious about studying					
2	I believed that I could cope at a tertiary level of study					
3	I was determined to succeed					
4	I believed that I could/would succeed					
5	I believed that I was smart enough to pass					
6	I believed I could understand the work required in the course					
7	I did not think my finances were related to my success in the course					
8	My values matched that of the institution					
9	I did not feel under pressure to complete my course work					
10	It was important to me to make friends with other students					
11	I was important to me to engage with other students and share experiences					
12	I saw attending class as important to success					
13	It was important for me to achieve my goals					
14	I wanted to achieve my long term goals					
15	It was important to me to complete my course					
16	I believed I was responsible for course success and/or goal achievement					
17	I felt comfortable in a Māori environment					
18	I was aware of tikanga (Māori philosophies and processes)					
19	I had knowledge of Maoritanga (things Māori)					

	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I was able to handle my personal issues					
2	I achieved my goals					
3	I planned to stay enrolled until the completion of my course					
4	I was flexible while studying					
5	I was able to deal with new tasks easily					
6	I usually handed my coursework in early					
7	I was usually ahead in my course work					
8	I had enough time to complete my course requirement					
9	I spent more time than just class time on campus					
10	I arrived on time to class					
11	I arrived early and stayed after class					
12	I spent time on campus outside of class hours					
13	I discussed course material with my classmates before and/or after class					
14	I attended class regularly enough to meet the minimum attendance requirements of the course					
15	I only choose courses that I enjoyed					
16	I had opportunities to express my culture within my course					
17	During the time of my study I was aware of kawa (Māori regional practices)					

	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I found the assessment in the course relevant to the course content					
2	I found the assessment in the course suited me					
3	My teacher's delivery style helped me to achieve					
4	My teacher assisted my success in the course					
5	I connected with my teacher					
6	My teacher understood the ways that Māori students learn					
7	The delivery mode of my course suited my lifestyle					
8	I had a good teacher-student connection with my teacher					
9	My teacher was available to talk about personal matter that affected class work					
10	My teacher recognised the life skills I brought to the classroom					

	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I have positive role models in education					
2	I believe that support is given to Māori students at TWoA					
3	I received support from my employer with regards to completing my study					
4	My community responsibilities did not negatively affect my study					
5	My whānau responsibilities did not negatively affect my study					
6	My whānau support helped me stay at TWoA					
7	My community and/or friends support helped me stay at TWoA					
	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I liked the Māori cultural context of TWoA					
2	I felt like I belonged at TWoA					
3	I did not feel lonely at TWoA					
4	I felt that being Māori was a positive thing at TWoA					
5	I was able to fit my life around my study					

	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	Finances did not affected my ability to staying in study					
2	I felt I had access to enough money to get me through my study					
3	I was able to afford the course I wanted to do					
4	I had the finances to pay for my study					
5	I felt that my work did not interfere with my study					
	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I was internally motivated to study (as opposed to externally)					
2	My life experiences influenced my course choice					
3	I wanted to study at a Māori tertiary provider					
4	Other people wanted me to study					
5	My family really wanted me to study					
	During my study:	Strongly Agree	Agree	Disagree	Strongly Disagree	No Comment
1	I always knew it was the right course for me to be doing					
2	I talked to people about what course to do before I enrolled					
3	I found the induction informative					
4	I found the orientation programme beneficial					