CULTURAL IDENTITY AND ACADEMIC ACHIEVEMENT OF MĀORI UNDERGRADUATE UNIVERSITY STUDENTS

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ABSTRACT

Cultural identity, academic outcome and psychological wellbeing were investigated among a non-random sample of 72 undergraduate Māori university students studying at Massey University. Student problems were examined to identify the types of difficulties that were most prevalent among this population. The relationships between student problems and academic outcome, and student problems and psychological wellbeing were then examined to assess the degree to which cultural identity moderates these relationships. Major findings are that (a) there are consistent negative relationships between student problems and grade point average, and student problems and perceived stress levels; (b) cultural identity is associated with a number of positive psychological and educational outcomes; (c) cultural identity moderates the effect of student problems on grade point average in that a high degree of problems were associated with decreases in grade point average among respondents with low cultural identity, while among respondents with high cultural identity student problems had little negative effect on grade point average; (d) cultural identity moderates the effect of student problems on perceived stress in that under conditions of low problems, students low in cultural identity have significantly higher levels of perceived stress in comparison with students high in cultural identity. Despite limitations the findings have important implications for Māori students, deliverers of tertiary education, tertiary education providers, and those involved in the development and implementation of tertiary education policy. The findings also highlight the need for further research aiming to optimise positive academic and psychological outcome among Māori students.

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CHAPTER ONE – INTRODUCTION

E tipu e rea, mo nga ra o te ao,
Grow up O tender child in the days of your world,
Ko to ringa ki nga rakau a te Pakeha,
In your hands the tools of the Pakeha,
Hei oranga mo to tinana.
As means to support and sustain you.
Ko to ngakau ki nga taonga a o tipuna,
In your heart the treasures of your ancestors,
Hei tikitiki mo to mahunga.
As a plume for your head.
Ko to wairua ki te Atua,
Your spirit given to God,
Nana nei nga mea katoa.
The source of all things.

Sir Apirana Ngata.

From the signing of the Treaty of Waitangi in 1840 through to the present day where Māori make up approximately 10% of all university students, the role that Māori have played within New Zealand's education system has undergone tremendous change. Pakeha colonisation of New Zealand brought with it a whole new set of perspectives and ways of living, quite foreign to those that Māori had traditionally lived under, with this came the need to adapt to a new environment. Significant amongst these many changes was the introduction of an education system, which made it necessary for Māori to seek formal qualifications in order to survive both socially, and economically.

Even prior to 1840 the Church Missionary Society set up the very first schools in New Zealand. Educating Māori children was seen as a means of making them more easily assimilated to their new society than their parents, particularly if they were

removed from their families and into boarding schools. Land war breaking out in several districts during the 1860's led to the breakdown of these missionary schools and from that point on the government assumed primary responsibility for Māori education (Sorrenson, 1995). The Native Schools Act of 1867 signalled the beginning of this new responsibility, then in 1871 following a change in policy, English became the only acceptable language in schools (Selby, 1996). The comments below outline the general attitudes and opinions held by prominent Pakeha of the time, regarding the education of Māori:

> 'I do not advocate for the Natives under present circumstances a refined education or high mental culture... if we remember that they are better calculated by nature to get their living by manual than by mental labour' (Taylor, 1862).

> '(the aim of schooling) is to bring an untutored but intelligent and high spirited people into line with our civilisation and by placing in Māori settlements European school buildings and European families to serve as exemplars of a new and more desirable mode of life' (Pope, 1880).

Much of the early Pakeha post-colonial literature used disparaging language to describe the 'ways' of the Māori. Māori culture was dismissed as being 'primitive', 'pagan', and even 'barbaric'. Subsequently many of the colonising educators who came to New Zealand, came with the purpose of 'uplifting' the Māori people (Smith,

1997). In practice this involved teaching Māori that their language, religion, culture, and way of life was inferior to that of the Pakeha.

Over the proceeding years and up to the turn of the century Māori numbers plummeted to an estimated low of 42,113 in 1896. There was a general belief amongst Pakeha, that the Māori were a dying race and that their extinction was inevitable (King, 1992). The gradual revival of the Māori race during the early 1900's was considered to be due to a number of factors, not the least of which was the concerted efforts of the Young Māori Party. Including well-known and highly educated Māori such as Apirana Ngata, Peter Buck, and Maui Pomare, the Young Māori Party set about leading the social recovery of Māori in what has become known as the Māori renaissance. Ngata became the first Māori university graduate when he graduated from Canterbury University as a lawyer, whilst Buck and Pomare were to both become medical graduates before entering into politics. They shared the view of the missionary schools that the survival of Māori was contingent on their successful assimilation with Pakeha. However, in contrast to the prevailing Pakeha view, they believed that the retention of a secure Māori identity was not only possible, but critical in facilitating this recovery (Durie, 1997). The whakatauki[1] from Sir Apirana Ngata that opens this chapter is a well-known expression of what he believed Māori needed to do in order to preserve and advance their culture. The proverb encourages Māori to give their hands to the tools of the Pakeha as a means of maintaining their physical well being, whilst giving their hearts to the treasures of their ancestors. This illustrated Ngata's belief that for Māori development to continue western philosophies and ideas needed to be embraced and adopted by Māori society

[1] A whakatauki is a proverb or a poem.

whilst at the same time acknowledging their ancestry and retaining their identity as a Māori. The proverb also sets down a challenge for both Māori and Pakeha by attempting to capture the essence of what it means to be bicultural in New Zealand (Mead, 1996). The idea of maintaining one's cultural identity as well as achieving in the largely westernised academic field is a notion that Ngata, Buck, and Pomare believed to be integral to Māori survival (Durie, 1997).

Education has long been identified by academics as one of the "pathways to empowerment" for Māori. Even today the need to up-skill and refine the practices of the Māori workforce is considered vital to there continued social recovery. In a recent statement, former Māori Affairs Minister Dover Samuels identified education as the "key" to bridging the vast social and economic gaps between Māori and non-Māori. Samuels spoke in reference to the recent "Closing the Gaps" report from Te Puni Kokiri that highlighted the comparative failure of Māori within the education system both in terms of achievement and representation at higher levels of tertiary education (Te Puni Kokiri, 2000). This statement referred to the flow-on effects that improved education would have towards greater employment, better health standards, and improved income ability.

It is important to acknowledge the political context in which this study is being conducted. In contrast to other ethnic groups studying at tertiary institutions around the world, there are specific obligations that New Zealand's education system has to Māori university students that flow directly from the nations founding document. These obligations are well encapsulated in Articles II and III of The Treaty of Waitangi. Article III alludes to the crowns responsibility to ensure Māori have the

benefit of all the rights and privileges of citizenship, amongst these liberties must fall the rights to, and the opportunities of an education. Further to this, Article II mentions the crowns responsibility to act to protect Māori interests (Durie, 1989). Empowering Māori to embrace rather than abandon their cultural identity undoubtedly falls into the category of protecting Māori interests. Durie (1997) reiterated that the right of Māori to retain their identity stems directly from the Treaty of Waitangi. In accordance with these obligations, Section 3.2.1 of the Massey University Charter (1997) acknowledges the principles of the Treaty of Waitangi and asserts their commitment to the core values enshrined by this document.

The importance of retaining a strong Māori identity has been reiterated by Olson (1993) who spoke about his own personal experience as an 'acculturated' Māori and the feeling of inadequacy in both Māori and Pakeha society. Olson described a series of negative outcomes that stem from a loss of identity; these included self-blame, guilt, anger, and self-destructive behaviour. He cited the high failure rate of Māori within the education system as being an many example of loss of identity in practice. The societal importance of facilitating and encouraging Māori students to maintain and embrace their cultural identity within the academic setting should not be underestimated. As the potential future leaders of Māoridom, the philosophies and practices that these individuals adopt will serve as a blueprint for those that follow. If their philosophies and practices are underpinned by a secure Māori identity then the likelihood is, that Māori values and beliefs will remain strong and retain their niche in society. An important implication of research into the cultural identity of Māori within the education system is the prospect that cultural identity facilitates positive academic outcome and psychological wellbeing among Māori students.

The possibility that an individual who is secure in his or her identity as a Māori, is more likely to succeed in an academic setting is a central focus of the present study. Although little research has investigated this interaction, qualitative research has looked to delineate factors that contribute to the success of Māori women in tertiary education. This research identified a number of aspects of Māori culture that were considered vital to the academic success of six Māori women, these included; whanau support, strong whakapapa, and knowledge of their Turangawaewae[2] (Selby, 1996). Recent Massey University research has also established that Māori who are more secure in their identity have higher educational aspirations than those less secure in their identity (Durie, 1998).

The interaction between cultural identity and psychological wellbeing was alluded to by Hirini (1999). He proposed that Māori lacking in their knowledge of cultural protocol experience a form of culture shock. Their awareness of this lack of knowledge in turn, can be manifested by symptoms that are likely to compromise their psychological wellbeing. These included increased levels of anxiety and adverse cognitive reactions in certain social situations. Whether these situations can be generalised to the academic environment is questionable, however it is possible that certain expectations befall Māori university students that require them to be more conversant in certain situations than non-Māori. Culture shock can be characterised by both physical and psychological/emotional responses (Hirini & Flett, 1999).

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[2] Turangawaewae – place of origin

In sum, the factors discussed above suggest that the interaction between Māori cultural identity and academic achievement in New Zealand's educational institutions is a tremendously complex issue with far-reaching implications. What *is* in no doubt is the fact that Māori are significant under-achievers in this critical aspect of society as identified by the 'Closing the Gaps' document (Te Puni Kokiri, 2000). There is an unquestionable need to study this relationship more closely.

The primary objective of the present research is to examine quantitatively the relationship between the construct of *cultural identity* and *academic achievement* among Māori university students. Additionally, the research will examine a number of other variables that have been linked with academic achievement by other researchers in various other contexts. As will be discussed in subsequent sections, the small body of research examining Māori cultural identity and academic achievement in the New Zealand context has employed questionable measurement tools and made some debatable assumptions. This study attempts to clarify the interaction between Māori cultural identity and a number of individual and contextual variables in the prediction of academic achievement.

A second objective of this study is to investigate the nature of the relationship between cultural identity and psychological wellbeing. Previous research has investigated the feasibility of cultural identity as a moderating factor in the prediction of self-esteem in adolescents (Romero, 1998). Romero proposed that cultural identity would moderate the influence of stress on self-esteem in such a way that cultural identity would operate as a protective factor in respect to mental health. Other research has explored the possibility that cultural identity acts as a moderator in the

association of other variables in an academic setting (Chatman, 1999). Chatman attempted to test the validity of their *Identity Paradox Model*, which predicts that cultural identity may buffer individuals against the negative academic effects of stereotype threat. Chatman's research tests the hypothesis that cultural identity may moderate the effect of stereotype threat on engagement in school in African-American college students. Stereotype threat pertains to the risk that the individual confirms negative societal stereotypes.

New Zealand research has assessed the notion that student problems impact directly on academic achievement and psychological wellbeing (Seymour, 1999). Tofi, Flett, and Timutimu-Thorpe (1996) proposed that social support acted to protect Pacific Island university students from the negative academic and psychological consequences of experiencing a high degree of problems.

In a similar manner cultural identity, as it is conceptualised in the present study, is hypothesised to moderate the relationship between student problems and academic outcome. Figure 1 illustrates the proposed relationship between variables. The construct of student problems has been linked to academic outcome by a number of other studies (e.g. Chandler & Gallagher, 1996; Tofi et al, 1996; Wong & Kwok, 1997; Seymour, 1999), these variables will be examined to assess the degree to which they vary in relation to cultural identity. The present research will also highlight a number of individual and contextual variables that are more directly associated with improved academic outcome among Māori undergraduate university students. The importance of the present study is accentuated by the fact that it is one of the few that

has attempted to quantify the extent of the relationship between cultural identity and academic outcome for Māori.

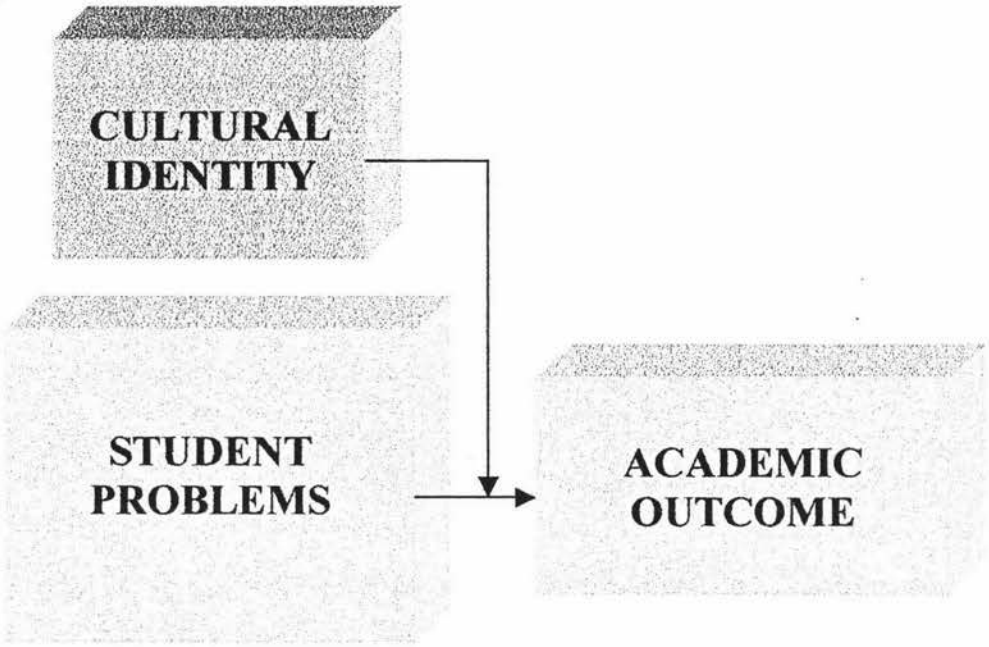


Figure 1. Model 1: Diagram depicting the proposed relationship between variables

Romero (1998) proposed that cultural identity acts as a protective factor with regard to mental health. The current study also tests the hypothesis that cultural identity acts to protect Māori students from the negative influence that student problems have on their psychological wellbeing. This research will assess the model depicted in Figure 2, where psychological wellbeing, is conceptualised as general self-efficacy, perceived stress, and psychological symptoms. In addition, the current study will also assess the degree to which each of these constructs, that collectively contribute to psychological wellbeing, vary in relation to cultural identity and academic outcome.

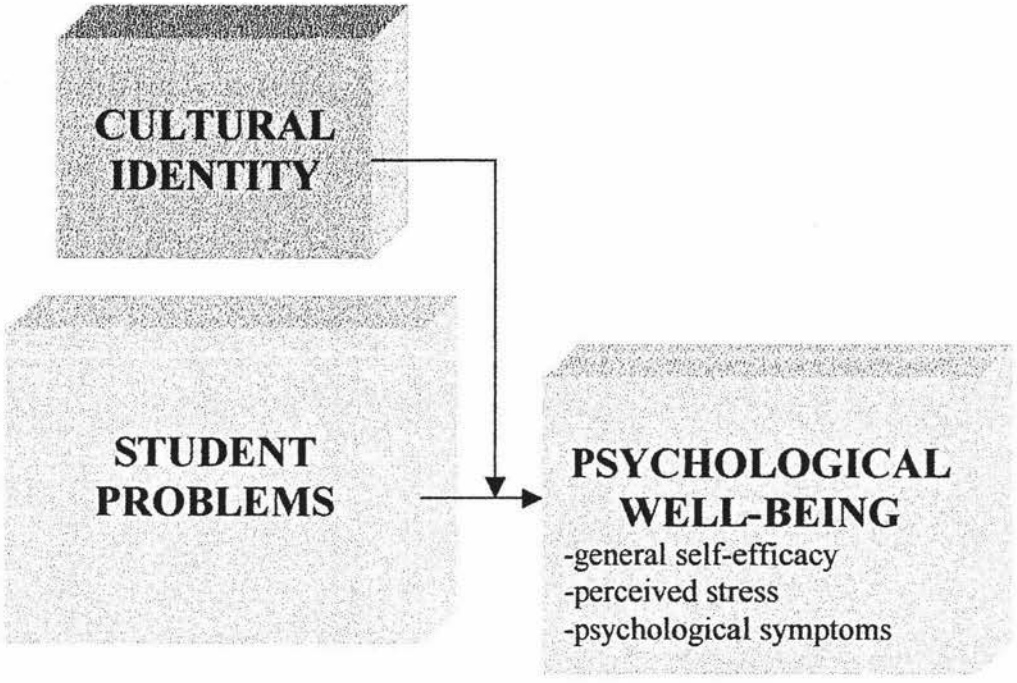


Figure 2. Model 2: Diagram depicting the proposed relationship between variables

The next section of this introduction will firstly examine the present conceptualisation of cultural identity, it will then go on to discuss the two dependent variables investigated by this study, academic outcome and psychological wellbeing. Next, the validity of student problems as a predictor of the dependent variables will be assessed. This will be followed by a discussion of the rationale for proposing cultural identity as a moderating variable in the models depicted above. Finally this introduction and the objectives of the present research will be briefly summarised.

1.1. Cultural Identity

Cultural identity has been conceptualised and defined in many ways and the concept of cultural identity has undergone constant evolution over the last century. Historically, vital statistics such as those used for birth and death records have relied solely on a biological conception of race with a Māori child being defined as one who has at least 50% Māori blood (Durie, 1998). Little credence was given to how individuals were placed in these categories, or what specific characteristic made each group unique. As the notion of cultural identity has evolved, its meaning is no longer viewed as uni-dimensional. Rather, it is viewed as a complex and multifaceted concept that incorporates numerous criteria in order that ethnic groups are able to differentiate themselves from others (Arroyo & Zigler, 1995). An example of this in practice is the manner in which Black Americans have emphasised their African heritage and their history of slavery to distinguish themselves from other ethnic groups in America (Smith, 1986).

These factors combine to make the definition of Māori cultural identity an extremely complex task. For the purpose of the present research, Māori cultural identity will not be regarded as a discrete entity such as gender, occupation, or age group, but an individual characteristic that exists on a continuum. Consistent with this, it is amenable to change throughout ones lifetime. Cultural identity as it will be considered in this study can be defined as the external and internal attitudes, actions, and feelings associated with being Māori.

As with all psychological constructs such as cultural identity, there is an acceptance that whilst ethnic groups may share a number of commonalities, a degree of within-group variability is inevitable (Matsumoto, 1996). Durie (1995) makes the assertion that Māori are a heterogeneous group and they live in diverse realities. The present research focuses on this within-group variability in cultural identity.

A review of the literature examining cultural identity is extremely complicated not only because of the range of ways that it has been conceptualised but also the various semantics that have been used to describe it. In the United States the term *ethnic identity* is most commonly used to describe a construct similar to cultural identity as it is conceptualised in the present study. Another term that has been used although less common is *racial identity.* The term cultural identity is used in the present study because it has become the commonly used term in the context of Māori in New Zealand.

In a summary of past research, Phinney (1990) noted that there has been a great deal of research examining the identity of minority cultural groups, e.g. Jewish and African-American ethnic groups. The most widely acknowledged components of ethnic identity were self-identification, sense of belonging, attitudes towards one's ethnic group, and ethnic involvement. Accordingly the way that cultural identity is defined between cultures is tremendously diverse.

Helms (1990) developed the Black Racial Identity Scale – Long Form (RIAS) to assess racial identity attitudes in African-Americans. This measure was subsequently used to assess identity amongst African American college students (Neville, Heppner,

& Wang, 1997). Helms proposes that Black racial identity development consists of a network of five phases from an initial status of conformity, whereby negative societal stereotypes are taken on, through to a stage where a positive Black identity is maintained, whilst upholding a balanced attitude towards "Whiteness". Individuals exist at various levels of this five-stage network (Helms, 1995).

Lorenzo-Hernandez and Ouellette (1998) used a version of a measure developed by Phinney (1992) known as the Multigroup Ethnic Identity Measure (MEIM) to assess ethnic identity and self-esteem in Dominicans, Puerto Ricans, and African Americans attending community college in the United States. In Phinney's opinion the four significant components of ethnic identity are; ethnic behaviour, identity achievement, and affirmation/belonging, the MEIM is reflective of these components. In contrast to other measures of ethnic identity, the MEIM is not specific to any particular ethnicity and can be used across cultural groups. The research found significant positive relationships between ethnic identity and self-esteem for all of the ethnic groups included in the study (Lorenzo-Hernandez & Ouellette, 1998). However, the fact that the MEIM is not a 'culture-specific' scale raises issues of concern regarding its ability to detect cultural nuances that are unique to a Māori identity.

One of the early efforts at the compilation of a measure of identity for a Māori population was developed by Williams (1960) and was known as the Māoritanga measure. It asked 10 questions that explored a variety of aspects of "being Māori". Based on their responses individuals were classified as acculturated, enculturated, or partially acculturated. This measure is however relatively outdated as the test included such items as, 'Do you have one half of Māori blood?' and 'Do you live on a

pa?' As mentioned earlier there has been a considerable move away from using biological estimations to ascertain identity (such as proportion of Māori blood) towards using individual self-identification to determine Māori ethnic identity (Durie et al, 1996). Additionally, the fact that there are very few Māori who are likely to still be living on a pa highlights the inappropriateness of some of the test items for the present research. More recently a Māoritanga measure was developed and used by Olson (1993) as part of his research into Māori health, and was used again by Banks (1996). This was a 28-item questionnaire that was derived from a variety of sources including the Williams Māoritanga measure (1960) and a measure, which was developed to evaluate acculturation in American Hispanics (Mendoza, 1989). One of the problem's that arises when developing measures of cultural identity, is that Māori culture is not a static construct but a constantly evolving entity (Durie, 1995). For this reason a more recent conceptualisation of Māori identity has been preferred.

A measure of cultural identity that will be used in the present research will be one which was developed as part of the, 'Te Hoe Nuku Roa – Māori profiles' project (Durie, et al, 1996). The measure incorporates characteristics that the authors view as being particularly relevant to a Māori cultural identity. Self-identification, knowledge of ancestral antecedents, involvement with whanau, and marae, access to ancestral land, social contacts, and Māori language ability are all incorporated into this measure. These dimensions are defined below.

- Self-identification – self-identification, rather than actual descent, is a preferred determinant of Māori identity. As mentioned earlier, not all individuals of Māori descent choose to identify as Māori. The Te Hoe Nuku

Roa-Māori Profiles project (Durie, et al, 1996) from a total sample of 132, found that 6% of respondents of Māori descent did not in fact identify as Māori.

- Whakapapa - a knowledge of one's ancestry.
- Marae participation – active involvement in marae-based activities.
- Whanau - a close connection to whanau. In terms of the measure, the greater role that ones whanau plays in their life, the more secure is their sense of identity.
- Whenua tipu - access to ancestral land because it serves to strengthen relationships with whanau.
- Contacts with Māori people –social interaction with Māori people in general.
- Māori language - Language is considered a vital component of the identity of any ethnic group because it is the means by which cultural knowledge is passed from generation to generation (Matsumoto, 1996). Ones understanding of Te Reo Māori is the final characteristic that is considered in the assessment of identity.

The present research will therefore consider these seven factors in the assessment of Māori cultural identity. Durie et al use the measure to place individuals in one of four identity profiles (secure, positive, notional, and compromised). The concept of a *secure identity* depends firstly on self-identification as Māori. In addition to this, individuals with a secure identity will have an involvement and knowledge of key characteristics connected to a Māori cultural base. Essentially, there will be evidence of higher levels of involvement in four of the six characteristics mentioned above (in addition to self-identity). Assignment of a *positive identity* again, rests firstly on self-

identification as Māori. In addition, respondents need to indicate they have a medium or moderate involvement in three of the six above-mentioned characteristics. Individuals who are given a *notional identity* indicate a positive self-identity as Māori. However when little or no involvement or knowledge of Māori cultural processes is indicated by responses to the other six key characteristics, these individuals are assigned a notional identity profile. Finally, where respondents fail to identify as Māori despite being of Māori descent, they are assigned a *compromised identity* profile. Even if respondents indicate involvement in, and knowledge of Māori processes if they respond negatively to the self-identification characteristic they are categorised as having a compromised identity.

The authors made a number of observations based on the use of these identity profiles with a regional (Manawatu-Whanganui) sample of 134. In terms of the identity profiles the distribution was as follows, secure identity (35%), positive identity (53%), notional identity (6%), compromised identity (6%). Additionally the researchers reported physical health benefits of having a secure cultural identity (Durie et al, 1996). Given that 88% of the sample was given either a secure or positive identity profile, and just 12% were given a notional identity or compromised identity, the validity of this finding is questionable. The identity profiles were also used in a small study looking at the cultural familiarity of the 1997 Māori All Black team. In their sample of twenty-one, 21% were included in the Secure Profile, 68% in the Positive Profile, 5% in the Notional Profile, and 5% in the Compromised Profile (Hirini & Flett, 1999). The present study relies on assessing variation in the measure of cultural identity. Using the Durie et al system of categorisation results in the majority of respondents falling into one of two categories. For this reason an

alternative measurement strategy has been developed (utilising the same 7 factors as in the Durie et al system), this is described in more detail in another section.

The second conceptualisation of cultural identity will be collective self-esteem (CSE). Collective self-esteem is a concept that is derived from Tajfel and Turner's social identity theory (1986). Social identity theory posits that self-concept is made up of two distinct components. One is the personal identity made up of certain individual characteristics such as personal talents or abilities; the other aspect is the social identity. The social identity stems from an individuals awareness of his or her membership in a societal group, and the emotional significance that they place on their involvement in that group (Tajfel, 1981). Although most often considered in a general sense, collective self-esteem, as it will be considered in the present research, refers to how the individual feels about his or her ethnic group membership. More specifically, how Māori university students feel about the fact that they *are* Māori. In accordance with social identity theory Luhtanen and Crocker (1992) conceptualised collective self-esteem in a manner that took into account four dimensions; private CSE, which assesses how individuals evaluate their social group privately; public CSE, which assesses how individuals perceive that other people evaluate their social group; importance to identity, which assesses the significance that group membership has to ones self-concept; and membership CSE, which assesses how well group members feel they function within that group. Although the scale is a general measure of collective self-esteem the authors advise that minor adjustments can be made to the wording of individual items for more specific research purposes.

One of the major approaches to the concept of ethnic self-esteem, and the process of acculturation is known as the "single-continuum model". Under this paradigm, acculturation refers to the loss of traditional cultural characteristics and the adoption of the cultural characteristics of the mainstream culture. Following on from this loss of cultural characteristics comes a structural assimilation with mainstream society. The single continuum model makes the assumption that highly acculturated individuals will have a less positive collective self-esteem related to their ethnicity (Porter & Washington, 1993). In accordance with this theory, Māori students who score highly on the Durie et al measure of Māori identity would be expected to have higher collective self-esteem than those who score do not score as high on that measure.

A great deal of research has explored the concept of collective or group self-esteem and the majority of it directed at ethnic group self-esteem. Previous research has looked at group self-esteem in African-Americans (Arroyo & Zigler, 1995) using the 'racelessness' model of Fordham and Ogbu (1986). Arroyo and Zigler's results indicated that African-American college students who felt that their ethnic group was evaluated negatively by others, lowered their appraisal of, and identification with, their ethnic group. Another study looking at ethnic group self-esteem in African-Americans, found that appreciation or positive regard for ones own culture was positively associated with higher education and a more comfortable integration into the wider society (Hughes & Demo, 1989). In sum, research has highlighted some positive benefits of collective self-esteem

To summarise, this section has defined cultural identity and described two approaches that will be used in the assessment of this construct. The first approach is derived from a measure created by Durie et al (1996). This measure gauges cultural involvement by incorporating characteristics that are considered as being particularly germane and in some cases unique to a Māori identity. The second approach to quantifying cultural identity is developed from a measure of collective self-esteem created by Luhtanen and Crocker (1992) so that rather than measure general collective self-esteem it will measure collective self-esteem related to ones ethnicity.

1.2. Academic Outcome and Psychological Wellbeing

1.2.1. Academic Outcome

The vested interest that educational institutions have in the academic progress of students has resulted in a large empirical body of research looking at factors that contribute to academic achievement. Grade Point Average (GPA), a mean score based on the numeric translation of final course grades, is typically used to measure the variable of 'academic achievement' although other self-report measures have been used (e.g. DeFour & Hirsch, 1990; Tofi et al 1996; Seymour, 1999). This thesis research seeks to consider some major factors that contribute to academic achievement (GPA) in Māori undergraduate students. GPA and the subjective measure of grade expectations to will be used to ascertain academic achievement

There is a growing empirical body of research examining the academic achievement of ethnic minority groups. Interest in their progress stems mainly from the fact that,

in general, ethnic minorities are under-performers in the academic field. Research has investigated the performance of American Indians, Latin Americans and African Americans in the United States, Aborigine in Australia, and Māori in New Zealand (Nettles, Thoeny, & Gosman, 1986; Gerardi, 1990; McInerney, 1990; Lynch & Mills, 1993; Wood & Clay, 1996; Potter, 2000). For the most part this research has sought to uncover explanations for this under-performance.

Although there is a general dearth of data available regarding the academic performance of Māori, it is commonly acknowledged that in comparison with non-Māori, Māori students are both under-represented and under-performing at all levels of the education system (Jefferies, 1997). Māori students are less likely to attend pre-school, more likely to leave secondary school without any formal qualification, and less likely to participate in tertiary education.

A study conducted in the years 1998-1999 investigated the academic performance of Māori university students studying at Massey University's Albany campus. The study accessed the academic records of 383 individual students. Among the findings were that 1 in 3 papers taken by Māori students were failed, 36% of Māori students had a failing grade point average (45% in the College of Business) and the attrition rate of Māori students was 28%. The researcher posits that 'the University has so far failed to provide, or create, a space where Māori students can realise their aspirations' (Potter, 2000). Given the nature of Potter's research, this statement does require further empirical verification. The present study seeks to understand some of the factors that may be contributing to this phenomenon of under-achievement.

The societal importance of Māori representation at higher levels of tertiary education has already been discussed. Other figures have supported the notion that Māori are under-represented at these higher levels of tertiary education. Ministry of Education figures have shown that 4.4 percent of Masters students, and just 2.7 percent of Doctorate students were Māori (1991). As an additional measure of academic outcome, the present study will also inquire into the motivation of students to seek higher qualifications, and delineate some of the variables that contribute to this.

This section has discussed the overall performance of Māori in the field of tertiary education and the conceptualisation of academic outcome in the present study. The general sense that is gained from past literature is that Māori are under achieving in the academic field. Research has primarily been descriptive rather than analytical in nature and, for the most part, has failed to address the factors that contribute to this phenomenon. Academic outcome as it is conceptualised in the present study will take into account three variables. Grade point average calculated directly from student academic records, will be the primary measure of academic outcome. Secondly, grade expectations will be considered as a self-report measure of academic achievement. In the context of the present study, motivation to continue study has also been deemed an important outcome of university study, thus this will also be considered alongside grade point average and grade expectations.

1.2.2. Psychological Wellbeing

For the purposes of the current study psychological wellbeing will be operationalised in terms of three constructs that are likely to reflect either enhanced or diminished wellbeing. These selected constructs are psychological symptoms, perceived stress,

and general self-efficacy. This section will consider each of these constructs in the context of the current study with reference to their use with student populations.

Psychological Symptoms

Symptom checklists assess a broad range of common psychological symptoms in line with the criteria set out in the current version of the official nomenclature the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed. [DSM-IV]; American Psychiatric Association, 1994). The assessment of psychological symptoms in what could be described as 'non-clinical' populations is widespread (Derogatis, 1994). Among other things, the measurement of such populations forms the basis for the development of normative values; in addition it provides psychologists with an extremely useful screening and research tool.

Most significantly in terms of the present research has been the use of the Hopkins Symptom Checklist-21 (HSCL-21: Green, Walkley, McCormick, & Taylor, 1988) The HSCL-21 is a 21 item version of the HSCL (58 items) developed by Derogatis (1974). It was constructed in New Zealand in an attempt to develop a 'less arduous' measure of psychological symptoms. The measure consists of three subscales General Feelings of Distress, Somatic Distress, and Performance Difficulty. The checklist was piloted on a New Zealand sample of 203 undergraduate students from Victoria University in Wellington. The authors went on to comment on the value of the HSCL-21 for both clinical purposes and for research (Green et al, 1988). The undemanding nature of the HSCL-21 coupled with its past use with a New Zealand university population make it an ideal measure for use in the present study. Therefore in the context of this research psychological symptoms will be conceptualised in

terms of an accumulation of symptoms in three domains; general feelings of distress – assessing items such as loneliness and sadness; somatic distress – assessing the presence of actual physical symptoms; and performance difficulty – assessing the ease with which everyday tasks such as speaking, and remembering information are accomplished.

Perceived Stress

Stress can be caused by an imbalance between environmental demand or pressure, and the capacity of an individual to meet that demand (Fisher, 1994). For the purpose of the current study, perceived stress can be defined as the degree to which an individual is aware of this imbalance.

The need for academic institutions to further enhance learning conditions for students, along with the accessibility of university students as research participants, has led to a large body of research examining the stress involved in academic life. Stress can occur for students for any number of reasons although common amongst these potential stressors are coping with the transition from home to university, learning study patterns, and coping with having to budget for oneself (Fisher, 1994).

Students who experience high levels of stress are often less likely to achieve well academically. In a sample of male college students, Daugherty and Lane (1999) found a significant relationship between college attrition and a number of psychosocial factors including stress perception. Perceived stress was also found to be a significant negative predictor of academic achievement in a sample of 197

students from a range of ethnic backgrounds (Hackett, Betz, Casas, & Rocha-Singh, 1992).

The range of stressors that students from ethnic minorities experience in the academic setting has also been extensively investigated. Australian research examined the level of difficulty that Asian students experienced in dealing with everyday situations at an Australian university (Barker, Child, Gallois, Jones, & Callan, 1991). In another study examining a sample of low-income Mexican-American high-school students, Gillock and Reyes (1999) found an association between stress and academic achievement whereby students who experienced high levels of stress were less likely to perform academically.

The present study will use a measure of perceived stress developed by a group of researchers for use with community samples with at least a junior high school education (Cohen, Karmarck, & Mermelstein, 1983). These researchers developed a 10-item scale consisting of items that assess the degree of environmental control that one has. The authors have supported the validity of the Perceived Stress scale (PSS-10) as an indicator of psychological wellbeing as it has been operationalised in the current context. They found that the PSS-10 had greater predictive validity than life-events scales in the estimation of psychological symptoms, physical symptoms, and health-care utilisation. These authors assume perceived stress to be a key mediator of the link between stressful events and poor health outcomes.

In sum, previous research has identified perceived stress as a particularly invasive and pertinent aspect of student life. Research has found stress to be associated with

negative academic outcome through both poor academic achievement and college attrition. The present study will conceptualise perceived stress in terms of a brief 10-item scale developed for use in a non-clinical sample.

Self-efficacy

Self-efficacy, relates to the optimism that an individual has about their ability to deal with situations that will potentially place demands upon their coping resources (Bandura, 1995). Among other things, people high in self-efficacy are generally more motivated, they challenge themselves more often, and they recover better from setbacks. On the other hand a low sense of self-efficacy can be associated with higher anxiety and stress, feelings of worthlessness, and poor self-esteem (Schwarzer, 1993).

In Bandura's (1995) opinion self-efficacy is a situation specific construct that reflects the level of confidence that we have in our ability to cope with stressful circumstances in particular situations. For example, an individual who has a high level of confidence in their ability to competently paint a house, may have relatively low confidence in their ability to cook a meal. It could be contended that this individual has high self-efficacy for manual labouring, but low self-efficacy for general household chores.

Some researchers have however proposed the existence of a generalised model of self-efficacy (Sherer, Maddus, Mercandante, Prentice-Dunn, Jacobs & Rogers, 1982; Shelton, 1990, Watt & Martin, 1994). This model operates on the premise that specific self-efficacies for a variety of situations can act in a cumulative fashion. The

result being that individuals with a positive self-efficacy in a wide range of situations will have higher general self-efficacy than individuals with positive self-efficacy in a comparatively limited range of situations (Watt & Martin, 1994). Literature has posited that the model of general self-efficacy provides a basis for improved mental functioning, and emotional healing (Shelton, 1990). For the purposes of the present research self-efficacy can be defined as; *the belief or confidence of being able to control challenging environmental demands by means of taking adaptive action* (Schwarzer, 1993). The current study will use the generalised measure of self-efficacy developed by two German researchers and then adapted into an English version (Jerusalem & Schwarzer, 1992)

Literature has supported the notion of a positive relationship between general self-efficacy and academic achievement (Seymour, 1999). Lent, Brown, and Hackett (1994) carried out a meta-analysis of 13 previous studies looking at the relationship between general self-efficacy and academic performance that revealed a modest but significant correlation between the two variables ($r=0.38$). More recent research has shown that self-efficacy can contribute to positive feelings in college students and as a result have a positive influence on their study performance (Vrugt, 1995), whilst another study found a positive association between academic performance and a general sense of self-efficacy in American university students (Christie & Segrin, 1999). Other research by Newby-Fraser and Schlebusch (1998) on first year undergraduates has shown a significant association between academic achievement and self-efficacy.

To summarise, this section has reviewed three variables, psychological symptoms, perceived stress, and general self-efficacy. These three variables will collectively be considered as being representative of the present conceptualisation of psychological wellbeing. Each variable will be considered in isolation as representing a different aspect of psychological wellbeing.

1.3. Student Problems as a Predictor of Academic Outcome and Psychological Wellbeing

University is a potentially stress-inducing experience for students. For young students it may be their first experience of independence and an introduction to a variety of new responsibilities. For mature students there comes a need to re-adapt to the educational environment. In addition to these there are the obvious academic concerns such as meeting assignment deadlines and dealing with end of year exams (Neville et al, 1997). Because of its great significance to the success of tertiary institutions a great deal of research has gone into identifying pervasive student problems and devising ways in which these problems can be minimised.

Typically, the measurement of experienced difficulties in an academic environment is conducted by asking students to rate pre-selected potential difficulties to indicate the degree to which each of these apply to them (e.g. Tyrrell, 1992; Lu, 1994). Similarly, the present study will conceptualise and quantify problems by asking respondents to

consider a series of specific situations that may be perceived as problematic and then asking them to rate the degree that each was difficult for them.

Despite the need, there is a dearth in the literature regarding the study barriers that are commonly encountered by Māori students. In a report prepared for Te Puni Kokiri with the aim of identifying barriers to Māori participation in tertiary education, several factors were regarded as being major deterrents to young Māori's aspirations to attend tertiary education. Some of these were; university programmes and environments not being suited to Māori needs; the high cost of tertiary study; lack of role models; lack of confidence in their own ability; and racism and intimidation (Jefferies, 1997).

Tyrrell (1992) found that falling behind with coursework, motivation to study, time pressures, and financial worries were the pre-dominant concerns in a sample of 94 undergraduate students in Ireland. A Hong Kong sample of mature students found that time constraints and study skills were the academic difficulties of major concern (Wong & Kwok, 1997). American research conducted to assess the types of problems dealt with by student counselling services proposed a set of categories they viewed as being particularly relevant to their clients, these included relationship difficulties, career concerns, and anxiety (Chandler & Gallagher, 1996). New Zealand research has also used problem scales in its assessment of the student experience (e.g. Eng & Manthei, 1985; Tofi et al, 1996; Seymour, 1999).

The current study has proposed the existence of two models in which student problems is a predictor of both academic outcome and psychological wellbeing. The

following section will discuss some of the past literature that has investigated the predictive validity of student problems with regard to these two outcome variables.

University resources are poured into support services such as student learning and counselling centres (Seymour, 1999). The availability of such services is indicative of the desire of universities to minimise the difficulties that students experience and their knowledge of the consequences that these problems can have. Overall, evidence available supports the intuitive notion that problems are predictive of both academic performance and psychological wellbeing among university students. Literature has supported this idea in the New Zealand context by constructing problem scales, using subjective measures of academic achievement, and employing measures of wellbeing (Seymour, 1999; Tofi et al, 1996).

Of particular relevance was the research by Tofi et al (1996). These researchers developed an ad-hoc scale reflective of problems commonly experienced by Pacific Island students. The authors found problems to be a significant negative predictor of academic performance and psychological wellbeing. The most commonly reported problem items were *worrying about courses, high workloads*, and *feelings of stress.* Using the same self-report measure of academic performance, Seymour (1999) demonstrated a significant association between academic achievement and student problems in a sample of 107 Massey University students. He also found difficulties to be a significant negative predictor of general wellbeing. The most commonly cited problems were categorised, these included *problems with academic staff, problems making the transition to university life, financial concerns*, and *time management issues.*

Overseas research has also provided strong support for the existence of a negative association between problems and psychological wellbeing. In a study of first year medical students in Taiwan, Lu (1994) found that students that reported a high frequency of general daily hassles were more prone to show depressive symptoms. In other research, Jou and Fudaka (1996) performed regression analyses to show that academic difficulties were significant predictors of depression in a sample of Chinese university students.

To summarise this section has discussed the present conceptualisation of student problems. In a similar manner to previous studies, the current study aims to develop a problem scale reflective of the types of academic and related difficulties commonly experienced by Māori university students. Research that has supported the notion that student problems are predictive of academic outcome and psychological wellbeing has been discussed.

1.4. Cultural Identity as a Moderating Variable

The theory of Fordham and Ogbu (1986) suggested that in order to become high-achievers within the American education system African-American students are forced to adopt many of the practices of the European-American community. In doing so they effectively distance themselves from their own identity in a phenomenon the authors refer to as 'racelessness' (Fordham & Ogbu, 1986). In contrast to this theory, the hypothesis of the current study is that a strong cultural

identity will act to protect Māori students from the negative academic and psychological consequences imposed by certain environmental stressors. This section will discuss the rationale for proposing that cultural identity moderates the relationship between student problems and academic outcome, and student problems and psychological wellbeing.

The various benefits of a positive cultural identity have been emphasised by a number of researchers. A study into African-American college students found significant correlations between their measure of "racelessness" and several measures of psychological well-being. Positive correlations were found between racelessness and measures of anxiety and introjective depression (where high levels of racelessness indicate a decreased level of cultural involvement) (Arroyo & Zigler, 1995). Verkuyten and Lay (1998) found that psychological wellbeing in adolescents from ethnic minority groups was affected positively by collective self-esteem. In other words, adolescents who were more generous in their self-evaluation of their ethnic group had superior psychological wellbeing to those who evaluated their ethnic group more negatively. Research examining the relationship between ethnic identity and perceived stress in African-American college students confirmed their hypothesis that students with higher levels of "Africentric identity" would exhibit lower levels of perceived stress (Chambers et al, 1998). In other work with African-Americans, Branscombe, Schmitt, and Harvey (1999) proposed a model whereby the negative psychological consequences of racial prejudice can be alleviated by identifying more strongly with the minority group. The researchers findings supported their proposed model.

There is a small body of empirical evidence that suggests that students who are more secure in their cultural identity, or who are more culturally involved, may experience fewer difficulties within the university environment. In a large study examining Africentric identity and stress in college students, the group of students with the highest levels of identity exhibited the lowest levels of perceived stress (Chambers, Kambon, Birdsong, Brown, Dixon, & Robbins-Brinson, 1998).

Research exploring the relationship between cultural identity (let alone Māori cultural identity) and general self-efficacy is extremely sparse. However the small amount of literature that can be found generally support the notion of a positive relationship between ethnic identity and self-efficacy. Blash & Unger (1996) found a positive relationship between efficacy and ethnic identity in African-American male youths. Overall, previous research supports the notion of a positive relationship between cultural identity and wellbeing.

Smith, Walker, Fields, Brookins, and Seay (1999) found that ethnic identity factors contribute to adolescents' perceptions of their ability to attain their educational goals, and to find meaningful vocations. The importance for Māori students of maintaining a positive cultural identity in an academic setting has been emphasised by a Ministry of Education publication (Kirikiri & Wrightson, 1990). Other New Zealand research that has alluded to the positive academic benefits of a positive cultural identity has been discussed elsewhere (e.g. Selby, 1996; Durie et al; 1996)

In a similar manner to Chatman's (1999) Identity Paradox Model and Romero's (1998) study investigating social identity theory, the present research proposes that

cultural identity will buffer the individual from the negative effects that a high degree of problems, have on academic outcome and psychological wellbeing. Chatman's study failed to produce any significant evidence of a moderating relationship. However in contrast to Chatman's work the present study employs multiple measures of cultural identity, academic outcome, and psychological wellbeing. Additionally, rather than developing its own measures to assess cultural identity, this study uses two measures that have been externally validated and used previously. Romero's study provided support for his hypothesis that positive cultural identity would moderate the influence of stress on self-esteem and depression. Verkuyten and Lay (1998) found that components of collective self-esteem mediated the relationship between perceived social status and psychological wellbeing in a group of Chinese living in the Netherlands. Bettencourt and Dorr (1998) found that the private and public components of collective self-esteem mediated the relationship between allocentrism and subjective wellbeing in a sample of 385 university students.

To summarise this section, previous research has proposed that cultural identity acts as a moderating variable to protect individuals from the negative consequences of certain environmental stressors. Similarly, the present study proposes that the negative impact that high levels of problems can have on academic outcome and psychological wellbeing is regulated by cultural identity. More specifically, this research hypothesises that Māori students who experience a high degree of problems will be less likely to show evidence of poor academic outcome, and less likely to suffer from poor psychological well-being if they exhibit a strong cultural identity. Previous research has proposed that cultural identity acts as a protective factor with regard to health and academic outcome. These studies have resulted in mixed

findings and there remains a need to clarify the nature of this relationship as it applies to the Māori student population.

1.5. Summary and Research Goals

This introduction has attempted to present the broader context in which the current study has been conducted, in doing so it has raised a number of issues. It has discussed the history and current circumstances of Māori within the New Zealand education system; in doing so it has acknowledged the comparative under-achievement and under-representation of Māori in this sector of society. It has considered the implications of the present research at an individual level, in terms of the way that Māori university students can best equip themselves to achieve academic success, and also at a societal level, in terms of the importance for Māoridom that its future leaders be secure in their Māori identity. The political implications of this study in terms of the responsibility that universities, as entities of the crown, have to Māori students in terms of the Treaty of Waitangi have also been discussed. The overall hypothesis of this research is that cultural identity acts as a moderating variable in relation to academic outcome and psychological wellbeing among Māori university students. This study proposes that cultural identity acts to protect the individual from the negative consequences that student problems have for academic outcome and psychological wellbeing.

This introduction has outlined past studies that have investigated the outcome variables of academic achievement and psychological wellbeing and their interaction

with student problems and cultural identity. Past literature has pointed to positive relationship between cultural identity and academic achievement, and between cultural identity and psychological wellbeing. It has also pointed to negative relationships between student problems and academic achievement, and student problems and psychological wellbeing. It is hoped that this research will help to clarify some of these relationships, in terms of the Māori student population.

Objective 1

To identify major obstacles and impediments as well as positive factors contributing to the academic outcome in Māori undergraduate university students.

The first objective of the present research is to identify the factors, both positive and negative, that associate with academic outcome in Māori university students, and among demographic sub-groups within this population. Although a great deal of research has documented the failure of Māori within the education system (e.g. Te Puni Kokiri, 2000; Potter, 2000; Chapple et al., 1997), there is surprisingly little research looking to discern the factors that contribute to this phenomenon. This research purports to delineate some of these factors through the development of a student problem scale.

Objective 2

To examine how constructs of student problems, self-efficacy, perceived stress, and psychological symptoms vary with different levels of cultural identity and academic outcome.

The second objective of this study is to examine how the constructs of cultural identity and academic achievement vary in relation to the range of individual and contextual variables that are assessed in the current study. As discussed earlier the implications of the relationship between cultural identity, academic outcome, and psychological wellbeing are far-reaching. Durie et al. (1996) have already established the positive health benefits of a secure Māori cultural identity, however research is yet to investigate the educational benefits. The present research purports to examine cultural identity among undergraduate Māori university students and explore how this construct varies with academic achievement. Previous qualitative research has suggested that a secure Māori identity is a positive predictor of academic achievement (Mead, 1996), however there is an absence of quantitative support for this notion. It is anticipated that this piece of research will go some way to filling-in this void in the literature.

Objective 3

To test the hypothesis that cultural identity acts to protect the individual from the negative consequences that student problems exert upon academic outcome and psychological wellbeing.

Past research examining African-American populations has proposed that cultural identity may buffer the negative consequences of stress on well-being, and also the negative consequences of stereotype threat on academic outcome. The third objective of the present study is to test whether cultural identity acts as a protective factor to the negative academic and psychological consequences of experiencing a high degree of problems.

It is anticipated that fulfilment of the objectives of this study will facilitate suggestions for future research and allow recommendations to be made for future practice.

CHAPTER TWO - METHOD

2.1. Setting

Participants were drawn from Māori students enrolled in undergraduate papers at Massey University in the year 2000. Massey University was established in 1927 primarily as an agricultural university aimed at servicing the needs of the rural farming area of the Manawatu. However since its inception it has undergone drastic change and tremendous growth. Whilst maintaining its reputation as arguably New Zealand's foremost agricultural and horticultural research base it now offers over 100 different degrees and programmes including New Zealand's only undergraduate degree's in Māori Visual Arts and Genetics. Massey University is a state funded tertiary institution that consists of four colleges made up of a total of fifty-six departments. It is unique in comparison with other universities in that it has three campuses based in Palmerston North, Auckland, and Wellington catering for approximately 13,000 New Zealand and international students. In addition it has in excess of 18,000 students studying from a distance through Massey University's extramural programme. In 1998 enrolments across all campuses and including extramural students exceeded 31,000 (Massey University, 2000). In sum, Massey University is a rapidly growing and changing university. It attracts students from a variety of backgrounds studying in a wide range of areas both on and off-campus.

2.2. Participants

Two non-probability convenience samples were drawn during the course of the current study. The first sample recruited volunteers to participate in a discussion group, the primary function of which was to identify items for a scale assessing the types of difficulties experienced by Māori students studying at Massey University. The second, more general sample, involved the recruitment of participants to complete the questionnaire on which the current study is based.

2.2.1. Discussion Group Participants

The discussion group consisted of a group of eight students. This sample consisted of three male and five female Māori students studying at Massey University. Four participants were undergraduate students and four were post-graduate students. Participant's ages ranged from 19 to 51 years

2.2.2. Survey Participants

Of 196 questionnaires that were distributed, a total of 72 were returned yielding a response rate of 37%. Respondents were also asked to return a grade access form granting permission for the researcher to access their academic records, a total of 58 grade access forms were returned yielding a response rate of 30%. The low rates of response may have been affected by impending exams. However, such a response rate is comparable and in some cases superior to other studies employing student samples (e.g. Tyrell, 1992; Seymour, 1999). Demographic properties pertaining to the sample group are presented in chapter three.

2.3. Measures

This study employed a variety of measures in the assessment of participants. These measures related to demographic variables, cultural identity, collective self-esteem, academic outcome, general self-efficacy, perceived stress, psychological symptoms, and experienced difficulties.

2.3.1. Demographic Information

Demographic information collected included gender, age group, tribal affiliation, study mode, course of study, and major subject.

2.3.2. Cultural Identity

Permission was sought from senior researchers of the Te Hoe Nuku Roa: Māori profiles research project (Durie et al, 1996) to use the Māori identity element of their larger questionnaire. This scale consists of eight items that asks respondents to provide information on self-identity, knowledge of ancestral antecedents, involvement with whanau and marae, access to ancestral land, social contacts, and their Māori language ability. These seven characteristics are combined and used to create identity profiles. This measure categorises respondents into one of four levels of Māori identity a secure identity, a positive identity, a notional identity, or a compromised identity. This is a process of categorisation, therefore internal reliability statistics are not relevant.

As discussed earlier, the variance in these identity profiles is particularly low. Because of this an alternative scoring system was formulated whereby higher scores

were indicative of an increased cultural involvement. This scoring system is presented in detail in Appendix 1. The present sample produced a Cronbach's alpha of .71.

Collective self-esteem was measured using a revised version of the Collective Self-esteem scale (CSES: Luhtanen & Crocker, 1992). This scale measures collective self-esteem in a manner consistent with social identity theory (Tafjel & Turner, 1986). The measure was initially developed as a 'global' collective self-esteem scale, that is endeavouring to capture respondents' broad social identity rather than any specific group identity such as gender, ethnicity, or other acquired group memberships. The present research was interested in assessing collective self-esteem for respondents ethnic group (specifically Māori). The authors of this scale advise that making minor alterations to their scale may be appropriate depending on the specific purposes of the research (Luhtanen & Crocker, 1992). Alterations were made to the scale instructions and some minor rewording was made of individual items so that the scale would assess collective self-esteem related to Māori identity.

The CSES asks respondents to indicate their level of agreement with a series of 16 statements on a 7-point likert scale ranging from 'disagree strongly' to 'agree strongly'. The CSES provides the researcher with an overall collective self-esteem score, as well as subscale scores measuring four proposed dimensions of collective self-esteem. For the purposes of this study a mean collective self-esteem score was utilised ($\alpha = .81$). The four subscales, made up of four items each; are Membership Collective Esteem, Private Collective Self-esteem, Public Collective Self-esteem, and Importance to Identity (Cronbach's alpha, .72, .53, .71, and .63 respectively). These

reliabilities suggest that caution is necessary in the interpretation of the private and identity subscales. The authors report that factor analysis has supported the notion of four components of collective self-esteem and revealed that the strongest correlations occur between Membership and Private CSE components, and the weakest correlations occur between the Public and Identity CSE components.

2.3.3. Academic Outcome

Academic outcome was firstly assessed objectively by accessing the Massey University database and retrieving the academic records of respondents. Student grades were then converted to a grade point average (GPA). The method used for calculating this grade point average is presented in Appendix 2. Grade expectations were also included as an academic outcome variable. A single question asking what grades respondents expect to achieve for most of their papers is answered on a 4-item scale ranging from 'mostly A's' to 'mostly D's'. Finally the motivation of respondents to seek higher qualifications is assessed based on their response on a 4-item scale.

2.3.4. Psychological Wellbeing

Psychological symptoms were assessed using the 21-item version of the Hopkins Symptom Checklist (Green et al, 1988). This measure asks respondents to indicate on a 4-point likert scale the degree that they have found a number of psychological symptoms distressing over the past week with possible ranges from 'not at all' to 'extremely'. This measure produces an overall Psychological Symptoms score as well as three 7-item subscales measuring Somatic Distress, General Feelings of Distress, and Performance Difficulty.

The authors report alpha reliability coefficients for student samples ranging from .75 to .86 for the subscales and .90 for the Total scale (Green et al, 1988). The current sample of 72 yielded a Cronbach's alpha of .85 for the overall scale and subscale reliabilities ranging from .73 to.82.

Perceived stress was assessed using the 10-item scale developed by Cohen, Kamarck, and Mermelstein (1983). Participants respond to a series of statements concerning their personal experience of stress over the past month on a 5-point likert scale ranging from 'Never' to 'Very often'. The reliability and validity of this approach to investigating perceived stress has been extensively investigated and documented elsewhere (Cohen et al, 1983; Levenstein, Prantera, Varvo, Scribano, Berto, Luzi, & Andreoli, 1993; Cole, 1999). With the current sample a Cronbach's alpha .of 88 indicates satisfactory reliability.

Self-efficacy was assessed using the 10-item Generalised Self-efficacy scale developed by Jerusalem and Schwarzer (1992). This measure asks participants to respond to a number of statements regarding their ability to cope with stressful circumstances on a 4-point likert scale. The scale ranges from 'not at all true' to 'exactly true' whereby respondents are asked to indicate the degree to which each statement is true for them. Responses across the ten items are summed yielding a final score out of forty. Higher scores are indicative of higher levels of general self-efficacy. The reliability (Cronbach's alpha) of the self-efficacy measure was .84.

The psychometric qualities of the Generalised Self-efficacy scale are well founded, it has been used in numerous studies and typically yields internal consistencies between $\alpha = 0.75$ and 0.90. Concurrent validity also showed that it correlated highly negatively with measures of depression, anxiety and shyness, and highly positively with self-esteem (Schwarzer, 1993).

2.3.5. Student Problems

Experienced difficulties were assessed using a 24-item scale developed specifically for this study (see Procedure for details of this process). The scale is made up of a series of statements or certain experiences (for example 'homesickness') that may or may not have been perceived as difficult. Respondents are asked to what extent they agree that each item has been a problem for them. Responses are made on a 5-point likert scale ranging from 'strongly disagree' to 'strongly agree'. The individual responses are summed yielding a total score out of 120 whereby higher scores indicate more experienced difficulties. A Cronbach's alpha of .83 was attained for this scale.

2.4. Procedure

The procedure undertaken in the current study is as follows:

2.4.1. Ethical Approval

An application for ethics approval was made to the Massey University Human Ethics Committee. Following this application several minor adjustments and suggestion

were made, following which ethical approval was granted. Prior to commencement of participant recruitment, contact was made with the chairperson of the Massey University Māori Students Association (Manawatahi), and the Te Rau Puawai Bursary Co-ordinator to outline the nature of the study, the planned sampling procedures, and finally to seek permission to proceed with the research.

2.4.2. Recruitment of Discussion Group Participants

Discussion group participants were recruited using the personal networks of the researcher. All prospective participants were informed that a time commitment of approximately 45 minutes would be required and that the purpose of the discussion group was to identify difficulties in their lives that were impinging on their academic aspirations. Participants were told that the purpose of this was to construct a Student Problem scale that would comprise part of a larger questionnaire. Efforts were made to ensure that the composition of the discussion group was representative of the diversity inherent in Māori students studying at Massey University.

2.4.3. Recruitment of Survey Paricipants

Sampling for this stage of research used two principal participant recruitment methods. The first method involved introducing the research to students at the beginning of lectures and asking for any individuals who were part of the target population to volunteer their participation. Interested students were given an outline of the study by the researcher. After being given the opportunity to read this outline, students who were interested in participating were given an information sheet (see Appendix 3), an informed consent form (see Appendix 4), and a contact phone number that they could call if they had any questions regarding the research or if they

decided that they did wish to complete the questionnaire. Those individuals who expressed a desire to be involved were posted a copy of the questionnaire (see Appendix 5) and grade access form (see Appendix 6).

The second method of participant recruitment used was approaching students through the Te Rau Puawai bursary group. This group consists of more than 100 Māori university students studying towards a variety of qualifications in the field of mental health. The researcher provided the Te Rau Puawai co-ordinator with copies of information sheets and consent forms. After being given an opportunity to read through the information sheet, the co-ordinator was invited to identify students from the group, whom she felt might be suitable to participate in this research. These students were contacted, given a brief outline of the nature of the research, and were sent an information sheet and an informed consent form. After a period of one week, these students were contacted by the co-ordinator and asked whether they would be willing to participate, those who replied in the affirmative were sent a questionnaire and grade access form.

2.4.4. Procedures to preserve anonymity and confidentiality

The process of accessing student grades raises ethical issues related to anonymity and confidentiality. An independent third party, an administrative member of staff at the School of Psychology, was responsible for accessing academic records. Participants were given the option of accessing the results and key findings of this research by ticking the box at the end of the questionnaire. This was sent to the researcher attached to the questionnaire but separately from the grade access form. If respondents indicated that they would like access to these results their code numbers

were recorded and they were posted a summary of the findings at the completion of research. Measures were put in place to ensure that the identities of the participants who requested feedback would remain anonymous. Data was presented in summary form, stratified across relevant demographic variables, but grouped in such a way that no individuals were able to be identified.

Prior to being posted all questionnaires, and grade access forms were given a three-digit code number to preserve confidentiality. Initially a list of code numbers and contact details were held under lock and key to allow participants who request the results and key findings to be sent them. The questionnaires were posted back to the researcher care of the Massey University School of Psychology office. Grade access forms were posted directly to the independent third party aforementioned and student identification numbers were used to obtain the academic record for each student. This data was then presented to the researcher accompanied by the three-digit code. Grade point averages were then calculated and linked to each student's questionnaire using the three-digit code.

2.4.5. Construction of a Student Problem Scale

An initial pool of items was generated by reviewing a group of studies that had used such scales in the assessment of student difficulties. Studies were selected based on their pertinence to the current research. Two studies in particular, conducted using sample groups drawn from Massey University, formed the basis of these selected items. Seymour (1999) and Tofi et al (1996) both used problem item scales in the assessment of student difficulties. Their scales consisted of 43 and 42 items

respectively, producing a group of 85 items. Construction of these two scales has been discussed elsewhere (Seymour, 1999; Tofi et al, 1996).

Discussion group participants were given the list of items generated by the researcher. Each item was then opened to group discussion. This discussion session was very effective with the group distinguishing a group of problems that they deemed to be particularly germane in the context of their collective academic experiences, and eliminating items they considered irrelevant. Participants also identified several other difficulties that did not appear in the generated list that they deemed to be particularly invasive.

This process yielded a list of 30 items to be included in the final questionnaire. It was initially intended that a factor analysis would be conducted in order to identify components of student problems. However, the final sample size was not sufficient for this to take place. Following data collection, six items from the Student Problem scale that exhibited non-significant positive correlations with grade point average were removed from the analysis because of poor concurrent validity. Therefore the final Student Problem scale consisted of a 24-item measure assessed as a uni-dimensional construct. The scale demonstrated a high internal reliability with a Cronbach's alpha of .83 for the 24-item scale.

2.5. Analysis

A descriptive analysis of the Student Problem scale was undertaken in order to identify the most frequently reported difficulties. This included an exploration of the problems most frequently cited by gender, and by age group.

Investigations of the relationships between all variables were undertaken using correlation coefficients (Pearson's r). On the basis of the correlation analysis results, significant relationships were identified and a series of four hierarchical multiple regression analyses were performed. Where appropriate further analysis was undertaken in order that significant relationships could be more easily understood.

CHAPTER THREE – RESULTS

The results of this study are presented in the following format:

1. Socio-demographic details of the sample are presented in Table 1 and descriptive statistics (means, standard deviations, and reliabilities where appropriate) for study variables are presented in Table 2.
2. A descriptive analysis of the individual items from the Student Problem scale is presented in order to identify the particular difficulties that are most frequently experienced by the sample group. Consideration will also be given to the difficulties identified by demographic sub-groups within the sample
3. A correlational analysis is presented to assess the relationships between the study variables.
4. A series of four hierarchical multiple regression analyses carried out to test the moderating effects of cultural identity on the relationship between problems associated with university study and outcomes (both academic and psychological). The associations between cultural identity and other study variables are examined via correlational analysis.

Data was initially coded and transferred to the Statistical Package for Social Sciences (SPSS). Reverse scored items were re-coded and scale totals were calculated. Several respondents omitted items from certain scales. These values were replaced using the respondents mean scores from the appropriate scale. Fourteen respondents failed to return their grade access form; these respondents were excluded from the analyses related to the affected scale, namely grade point average.

3.1. Descriptive Statistics

A broad overview of the participants can be gained by viewing demographic statistics as well as the means and standard deviations of the various variables used in the analyses. Table 1 presents the demographic variables with regard to the present sample.

Table 1
Demographic Characteristics of Survey Respondents

Variable	Level	n	%
Gender	Male	19	26
	Female	53	73
Age	18-23	24	33
	24-30	11	15
	31-40	18	25
	41+	19	26
Study mode	Full-time	51	71
	Part-time	21	29
Degree	BA	34	47
	BSW	19	26
	BBS	7	10
	BTech	4	5
	BSc	3	5
	BAppSc	3	4
	BInfSc	2	3

As indicated in Table 1, participants in the research were mostly female and of varying age ranges. The majority (71%) were full-time students while 83% were studying towards a Bachelor of Arts, a Bachelor of Social Work, or a Bachelor of

Business Studies. In total twenty-six iwi groups were represented in the sample. The iwi most commonly identified were Ngati Kahungunu, Ngati Raukawa, Te Arawa, and Ngati Porou. Together these three accounted for the tribal affiliations of 45% of all respondents.

Table 2 presents descriptive statistics for the cultural identity, psychological well-being, student problems, and academic outcome measures. Although norms are not available for these variables a sense for the means can be gained from the possible range of scores for each scale.

Table 2
Summary of Means, Standard deviations and Coding Algorithms for Variables

Variable	Coding Algorithm	Mean	SD	α
Cultural Identity	Score from Maori Identity measure (Min-0. Max-32)	22.28	4.21	0.
	Score from Collective self-esteem scale (CSES) (Min-4, Max-28)	22.43	2.87	0.
	Score from CSES subscale (Identity) (Min-1, Max-7)	5.96	1.00	0.
	Score from CSES subscale (Public) (Min-1, Max-7)	4.30	1.18	0.
	Score from CSES subscale (Private) (Min-1, Max-7)	6.20	.79	0.
	Score from CSES subscale (Membership) (Min-1, Max-7)	5.97	1.00	0.
Psychological Well-being	Score from Symptom Checklist (HSCL) (Min-21, Max-84)	35.13	7.77	0.
	Score from HSCL subscale (Somatic distress) (Min-7, Max-28)	10.56	3.39	0.
	Score from HSCL subscale (General distress) (Min-7, Max-28)	11.50	3.46	0.
	Score from HSCL subscale (Performance diff.) (Min-7, Max-28)	13.20	3.31	0.
	Score from Perceived Stress scale (Min-0, Max-40)	17.60	6.37	0.
	Score from General self-efficacy scale (Min-10, Max-40)	31.23	4.25	0.
Student Problems	Score from Student Problem scale (Min-24, Max-120)	94.00	15.5	0.
Academic Outcome	Grade Point Average (Min-0, Max-8)	2.55	1.55	-
	Grade Expectations – 4 item scale (Min-1, Max-4)	2.88	0.65	-
	Motivation to seek higher qualification – 4 item scale (Min-1, Max-4)	3.22	0.92	-

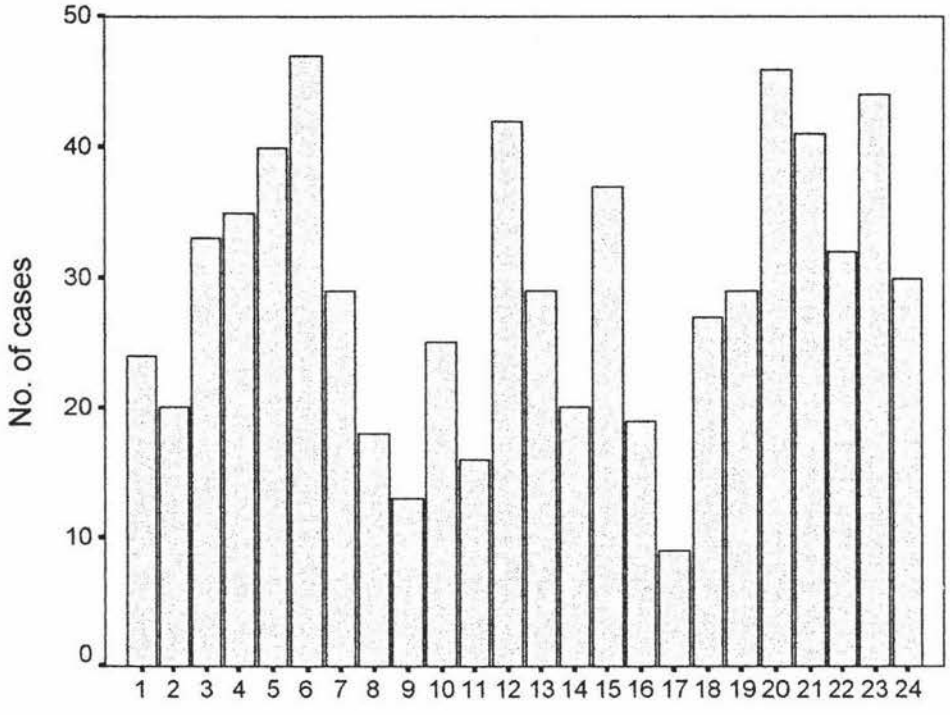
Overall this sample of students perceive themselves to be at the higher end of the Māori identity scale. Responses to the CSES scale indicate that students have a

positive self-esteem related to being Māori. However the CSES Public subscale is significantly lower than the other three subscales indicating that some students consider public perception of Māori to be less positive. Due to low internal reliability (see Table 2), responses to the CSES Identity and Private subscales must be viewed with caution. The mean score for the Symptom Checklist indicates that overall most students experienced relatively few symptoms suggesting positive psychological wellbeing. Mean responses to the perceived stress scale indicated that the average student experienced stress some of the time. Meanwhile the Student Problem scale showed that most students agreed that individual items were a hinderance during their university studies. On average most students deemed the self-efficacy statements to be either 'moderately' or 'exactly' true indicating positive self-efficacy. Grade point average indicated that the majority of students were achieving between a B and a C in their overall academic record, whilst self-rated grade expectations were 'mainly B's'. The majority of students were either 'somewhat' or 'highly' motivated to seek higher qualifications.

3.2. Student Problem Scale Analysis

Closer inspection of the individual responses to the items on the Student Problem scale administered can provide a clearer picture of the types of problems that are being experienced by Māori university students. Figure 3 presents an item by item summary displaying the frequency with which respondents were in agreement that particular difficulties were pertinent to their academic experience. The frequency represents the number of respondents who either agreed or strongly agreed that each

item was a problem for them. Descriptive statistics (means and standard deviations) for each individual item are presented in Appendix 7.



Key

1. Ability of lecturers to present information
2. Ability of tutors to present information
3. Achieving good results
4. Adjusting to study after years in the workforce
5. Adjusting to the style of teaching and learning at this university
6. Balancing the demands of work and study
7. Feeling to shy to contact lecturers
8. Conflict with people I live with
9. Feeling dependent on parents/family
10. Financial conflicts with family/partner
11. Homesickness
12. Learning the academic language
13. Living up to others expectations
14. Having no-one to discuss my problems with
15. Paying back my student loan
16. Prejudice/Racism
17. Pressure from parents regarding finances
18. The culture shock of the university lifestyle
19. University study feels very impersonal
20. Balancing study with family commitments
21. Understanding what is required to do well on assignments
22. Understanding how to access academic support
23. Getting behind with course work
24. Making myself understood

Figure 3. Bar graph illustrating the types of academic difficulties considered pervasive by the present sample (n=72)

Figure 3 shows that the problems of; *balancing the demands of work and study, balancing study with family commitments, getting behind with course work, learning the academic language, understanding what is required to do well on assignments, and adjusting to the style of teaching at Massey University*, are identified by a high percentage of the present sample as being pervasive problems in the context of their academic experience. The least frequently sited difficulty was found to be *understanding how to access academic support* with just 12% of those sampled regarding it as a problem for them.

Simple analyses were also conducted comparing demographic sub-groups in terms of their mean responses to individual items on the problem scale. Respondents were firstly grouped based on gender then mean responses to the individual items were considered (see Appendix 8). The most commonly experienced difficulties for male respondents were; *feeling to shy to contact lecturers, understanding what is required to do well on assignments, balancing study with family commitments,* and *adjusting to the style of teaching and learning at this university.* The most commonly experienced difficulties for female respondents were; *balancing study with family commitments, balancing the demands of work and study, learning the academic language, and adjusting to the style of teaching and learning at this university.*

The sample group was then grouped by age into two groups, above and below thirty years. Mean responses to the Student Problem scale items were then considered (see Appendix 9). The most pervasive difficulties for respondents aged under thirty were;

paying back their student loan, living up to others expectations, university study feels very impersonal, and *balancing the demands of work and study.* Among respondents aged over thirty the most commonly sited problems were; *balancing study with family commitments, balancing the demands of work and study, learning the academic language,* and *adjusting to study after years in the workforce.*

3.3. Relationships Between Variables

Academic outcome as it has been measured via grade point average represents a continuous variable. Pearson product-moment correlations were calculated to assess the interrelationships between the key study variables which were: grade point average, grade expectations, motivation to seek higher qualifications, Māori identity, collective self-esteem, psychological symptoms, perceived stress, general self-efficacy, and problems. Table 3 presents the intercorrelations among these variables. Note that despite the relatively low level of measurement, grade expectations and motivation to seek higher qualifications were treated as continuous variables for the purpose of this analysis.

From this table it is interesting to note that higher grade point average was significantly associated with decreased psychological symptoms, decreased somatic distress, decreased performance difficulty, and decreased problems. Higher grade expectations were associated with decreased psychological symptoms, and decreased somatic distress. Greater motivation to continue study is associated with higher

collective self-esteem, decreased psychological symptoms, less perceived stress, and greater general self-efficacy. The general picture that emerges from this analysis is one that suggests that academic outcome, conceptualised in a variety of ways, is associated with a number positive psychosocial outcomes.

Higher Māori identity was associated with higher collective self-esteem and decreased stress. In addition to its positive association with Maori identity, higher collective self-esteem was associated with decreased psychological symptoms, decreased somatic distress, decreased general distress, decreased performance difficulty, decreased perceived stress, and increased general self-efficacy.

High levels of problems were associated with more perceived stress, and more performance difficulty. Interestingly however, problems was not associated with either grade expectations or motivation to seek higher qualifications.

Table 3. *Correlations among variables (n=56-72)*

	1	2	3	3a	3b	3c	3d	4	4a	4b	4c	5	6	7	8	9
1. Grade point average	-															
2. Māori Identity	-.021 p=.876	-														
3. Collective self-esteem	.185 p=.165	**.471**** **p<.01**	-													
3a. Public CSE	.098 p=.463	.154 p=.197	**.621**** **p<.001**	-												
3b. Private CSE	.166 p=.213	.174 p=.144	**.691**** **p<.001**	**.242*** **p<.05**	-											
3c. Membership CSE	.192 p=.149	**.590**** **p<.01**	**.817**** **p<.001**	**.268*** **p<.05**	**.444**** **p<.001**	-										
3d. Identity CSE	.090 p=.501	**.444**** **p<.01**	**.773**** **p<.001**	.146 p=.222	**.463**** **p<.001**	**.678**** **p<.001**	-									
4. Psychological Symptoms	**-.291*** p<.05	-.075 p=.537	**-.399**** **p<.01**	**-.297*** **p<.05**	-.120 p=.318	**-.336**** **p<.01**	**-.356**** **p<.01**	-								
4a. Somatic Distress	**-.416**** p<.01	-.078 p=.514	**-.317**** **p<.01**	-.145 p=.225	-.185 p=.120	**-.246*** **p<.05**	**-.347**** **p<.01**	**.759**** **p<.001**	-							
4b. General Distress	-.051 p=.702	-.145 p=.224	**-.263*** **p<.05**	**-.340**** **p<.01**	.018 p=.884	-.167 p=.161	-.201 p=.090	**.724**** **p<.001**	**.267*** **p<.05**	-						
4c. Performance difficulty	**-.278*** **p<.05**	-.022 p=.856	**-.387**** **p<.01**	-.209 p=.080	-.144 p=.231	**-.419**** **p<.001**	**-.328**** **p<.01**	**.824**** **p<.001**	**.508**** **p<.001**	**.403**** **p<.001**	-					
5. Perceived Stress	-.068 p=.617	**-.243*** **p<.05**	**-.323**** **p<.01**	**-.395**** **p<.01**	-.091 p=.453	-.185 p=.126	-.198 p=.101	**.622**** **p<.001**	**.376**** **p<.01**	**.662**** **p<.001**	**.397**** **p<.01**	-				
6. Student problems	**-.330*** **p<.05**	.059 p=.620	.029 p=.811	-.032 p=.791	-.103 p=.387	.018 p=.883	.184 p=.122	.171 p=.153	.067 p=.576	.083 p=.487	**.267*** **p<.05**	**.295*** **p<.05**	-			
7. General self-efficacy	.086 p=.527	.137 p=.258	**.279*** **p<.05**	**.332**** **p<.01**	.065 p=.591	**.266*** **p<.05**	.095 p=.433	-.183 p=.133	.014 p=.908	**-.420**** **p<.001**	-.049 p=.687	**.262*** **p<.05**	-.075 p=.539	-		
8. Motivation to seek higher qualifications	.048 p=.722	.205 p=.084	**.426**** **p<.001**	**.234*** **p<.05**	.230 p=.052	**.362**** **p<.01**	**.403**** **p<.001**	**-.469**** **p<.001**	**-.261*** **p<.05**	**-.441**** **p<.001**	**-.378**** **p<.01**	**-.254** **p<.05**	.042 p=.728	**.237*** **p<.05**	-	
9. Grade expectations	**.529**** **p<.01**	-.013 p=.914	..138 p=.246	.083 p=.487	.133 p=.267	.130 p=.275	.064 .596	**-.242*** **p<.05**	**-.295*** **p<.05**	-.160 p=.179	-.144 p=.232	-.213 p=.077	-.223 p=.060	.172 p=.154	.188 p=.113	-

3.4. Regression Analysis

The major hypothesis of the present study was that cultural identity would have a significant buffering effect for Māori students experiencing problems associated with their university study. Higher levels of problems were conceptualised as having less negative impact on academic achievement and general psychological wellbeing in the presence of a strong sense of cultural identity.

Correlation coefficients suggested that low grade point average was associated with increased problems (see Table 3). In light of this finding, the moderating potential of cultural identity was assessed by running two three-step hierarchical multiple regression analyses to judge whether cultural identity moderates the effect of problems on grade point average. The two regressions were required in order to assess the buffering effects of the two separate measures of cultural identity. The Durie et al (1996) definition saw cultural identity as being reflective of individual involvement in a number of dimensions considered to be characteristic of a Māori identity. The second definition, based on the Collective Self Esteem Scale (Luhtanen and Crocker, 1992) saw a sense of cultural identity as reflecting one's personal feeling about their ethnic group membership. Table 3 also shows that a high degree of problems are associated with increased perceived stress. Two three-step hierarchical multiple regression analyses were conducted to ascertain whether cultural identity moderates the effect of problems on stress perception.

Prior to analyses, the variables were screened to ensure that they met assumptions of multiple regression analysis. Tabachnik and Fidell (1989) suggest that conventional but conservative alpha levels (e.g. $p<.001$) be used to evaluate the significance of skewness and kurtosis. Two cases with high scores on the stress variables were found to be univariate outliers and were deleted from subsequent analyses. Multivariate outliers were screened for using Mahalanobis distance, this analyses found no cases in violation of this assumption with $p<.01$.

3.4.1. Regression #1: Māori identity as a moderator of the relationship between problems and grade point average.

A three-step hierarchical multiple regression was conducted with grade point average as the dependent variable. To control for the demographic variables of gender, age, and mode of study, these were entered at the first step. Māori identity and problems were entered at step two. A vector formed by calculating the cross product term of Māori identity and problems was added at step three (Flett, Biggs, & Alpass, 1995). In this way the variance accounted for by the interaction of Māori identity with problems was assessed whilst controlling for their main effects.

Table 4 presents the results of this regression. After controlling for demographic variables at step one the, R for the regression was not significantly different from zero. The addition of Māori identity and problems at step two did not result in a significant F change. Finally the addition of the interaction term to the equation at step 3 was not significant with $F(1, 50) = .143$, $p=.707$. Problems were not significant at this level.

Table 4.
Hierarchical multiple regression of individual and contextual variables and the interaction of Māori identity on grade point average showing standardised beta coefficients, R, R^2, and adjusted R^2.

PREDICTOR	Step 1: Beta	Step 2: Beta	Step 3: Beta
Gender	-.070	.011	-.021
Age	-.124	-.114	-.107
Mode of Study	-.039	-.017	-.004
Problems		**-.317***	-.270
Māori Identity		.043	.039
Māori Identity X Problems			.101
R	.185	.352	.361
Total R^2	.034	.124	.131
Adjusted R^2	-.019	.039	.028
R^2 change		.089	.007

*p<.05, **p<.01, ***p<.001

3.4.2. Regression #2: Collective self-esteem as a moderator of the relationship between problems and grade point average.

The three demographic variables of gender, age and study mode were again entered at step one of the regression with grade point average as the dependent variable. After insertion of these variables the regression model was not significant. At step two collective self-esteem and problems were entered. The addition of these variables did produce a significant F change. Problems was a significant predictor of grade point average at this step. Finally at step three the interaction term involving collective self-esteem and problems was entered producing a significant F change, F (1,50) = 4.725, p<.05. Both problems and the interaction between problems and collective

self-esteem were significant in the prediction of grade point average. A total of 16% of the variance in grade point average could be predicted by knowing scores on these variables.

Table 5.
Hierarchical multiple regression of individual and contextual variables and the interaction of collective self esteem on grade point average showing standardised beta coefficients, R, R^2, and adjusted R^2.

PREDICTOR	**Step 1: Beta**	**Step 2: Beta**	**Step 3: Beta**
Gender	-.070	-.026	-.024
Age	-.124	-.187	-.147
Mode of Study	-.039	-.047	-.027
Problems		**-.304***	**-.345***
Collective self-esteem		.259	**.276***
Collective self-esteem X Problems			**.273***
R	.185	**.426***	**.500***
Total R^2	.034	.182	.250
Adjusted R^2	-.019	.103	.162
R^2 change		**.147***	**.069***

*p<.05, **p<.01, ***p<.001

A schematic representation of the interaction between collective self-esteem and problems is presented in Figure 4. This data was derived by conducting a median split on the measures of collective self-esteem and problems.

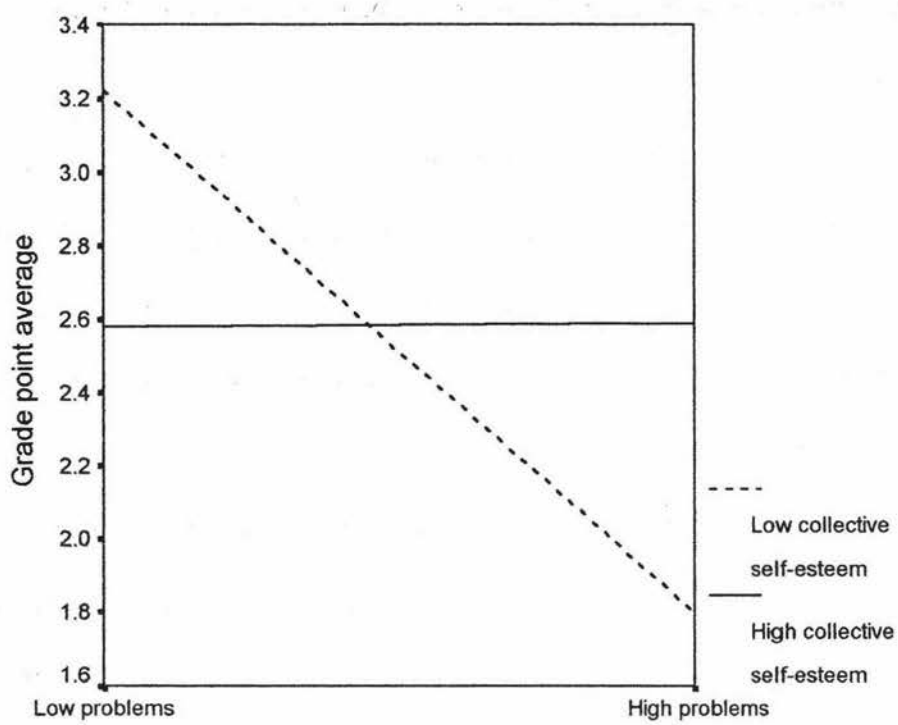


Figure 4. Schematic representation of the collective self-esteem X problems interaction in the prediction of academic achievement

Figure 4 illustrates that collective self-esteem moderates the effects of problems on academic achievement. The grade point average of Māori students with high collective self-esteem remains relatively stable under conditions of low problems and under conditions of high problems. This is in contrast to the relationship between problems and grade point average among students with low collective self-esteem. Figure 4 exemplifies that among students with low-collective self-esteem, those that experience a high level of problems have a significantly lower grade point average than those who experience a low level of problems.

3.4.3. Regression #3: Māori identity as a moderator of the relationship between problems and stress.

A three step hierarchical multiple regression was conducted with stress as the dependent variable. Demographic variables were entered at step one. After entering gender, age, and study mode the model was not significant. At step two Māori identity and problems were entered. This resulted in a significant F change, $F(2,64) = 5.688$, $p<.01$. At this level gender, problems, and Māori identity were significant predictors of stress. Finally, the term representing the interaction between Māori identity and problems was entered into the model. This did not result in a significant F change, $F(1,63) = 2.148$, $p=.148$. Table 8 presents the results of this regression.

Table 6.
Hierarchical multiple regression of individual and contextual variables and the interaction of Māori identity on stress showing standardised beta coefficients, R, R^2, and adjusted R^2.

PREDICTOR	**Step 1: Beta**	**Step 2: Beta**	**Step 3: Beta**
Gender	**.301***	**.295***	.335
Age	-.146	-.121	-.101
Mode of Study	-.105	-.098	-.069
Problems		**.243***	**.305***
Māori Identity		**-.284***	**-.298***
Māori Identity X Problems			.187
R	.319	**.487****	.512
Total R^2	.102	.237	.262
Adjusted R^2	.061	.178	.192
R^2 change		**.136****	.025

*p<.05, **p<.01, ***p<.001

3.4.4. Regression #4: Collective self-esteem as a moderator of the relationship between problems and stress.

The final regression entered the three demographic variables at step one. This did not produce a significant model. At the second step collective self-esteem and problems were entered into the model. This resulted in a significant increment in R^2 (R^2*change* = .149, $p<.01$). Gender, problems, and collective self-esteem were all significant in the prediction of stress. Finally at step three, an interaction term calculated from the cross product of the variables deviation scores was added. This resulted in a significant increment in R^2 (R^2*change* = .092), $p<.01$. This regression model accounted for 28% of the variance in perceived stress. There is also evidence of a partial mediating effect for problems in that at step three once other effects are controlled for problems is no longer significant.

Table 7
Hierarchical multiple regression of individual and contextual variables and the interaction of collective self-esteem on stress showing standardised beta coefficients, R, R^2, and adjusted R^2.

PREDICTOR	**Step 1: Beta**	**Step 2: Beta**	**Step 3: Beta**
Gender	**.301***	**.254***	**.223***
Age	-.146	-.065	-.028
Mode of Study	-.105	-.066	-.067
Problems		**.239***	.168
Collective self-esteem		**-.321****	**-.332****
Collective self-esteem X Problems			**.315****
R	.319	**.501****	**.585****
Total R^2	.102	.251	.343
Adjusted R^2	.061	.192	.280
R^2 change		**.149****	**.092****

*p<.05, **p<.01, ***p<.001

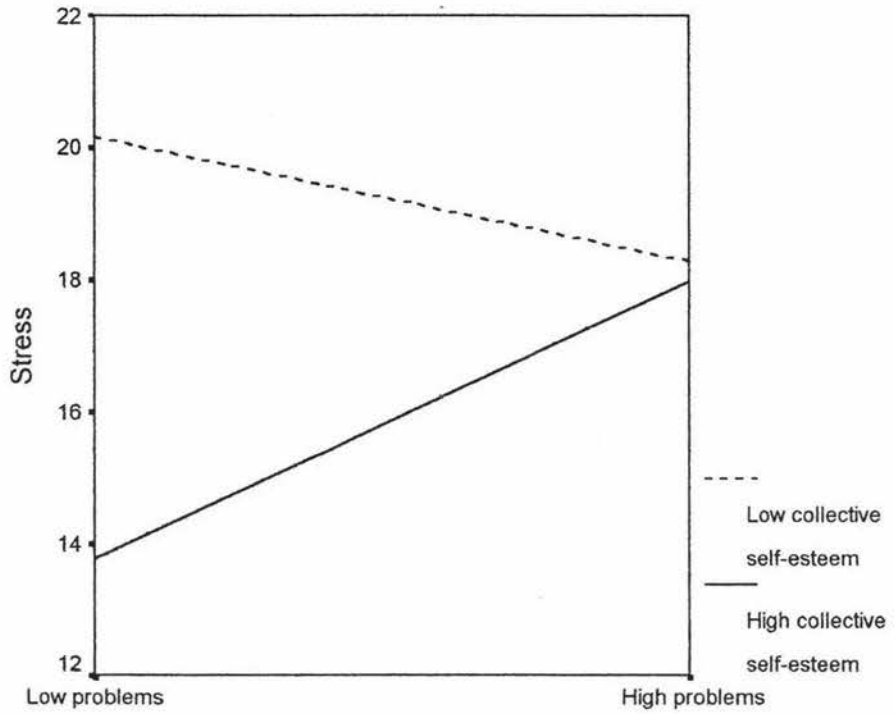


Figure 5. Schematic representation of the collective self-esteem X problems interaction in the prediction of stress.

Figure 5 illustrates the nature of the interaction effect in the case of collective self-esteem and problems. The figure shows that Māori students with low collective self-esteem report significantly higher levels of stress than student with low collective self-esteem under conditions of few problems. Under conditions of high problems, students with low collective self-esteem report similar levels of stress to those with high collective self-esteem.

3.4.5. Contrasting the results of the hierarchical regression analyses

A comprehensive inspection of the significant predictor variables in the estimation of grade point average and stress reveals that of the four three-step multiple regression analyses that were conducted, three produced models that contributed significantly to

the prediction of the dependent variable. Two of these three models detected a significant interaction effect at step three of the analysis. A summary of the significant main effects and interaction effects for each of these models is presented in Table 8.

Table 8.
Summary of predictor variables ($p<.05$) for the hierarchical multiple regression analyses with significant interaction terms.

REGRESSION #2 DV – Grade point average IV's – Gender, age, mode of study, problems, collective self-esteem, collective self-esteem x problems			
	Step 1	Step 2	Step 3
Demographic variables	Not significant		
Main effects		Problems	Problems
Interaction effect			Collective self-esteem x problems

REGRESSION #4 DV – Perceived Stress IV's – Gender, age, mode of study, problems, collective self-esteem, collective self-esteem x problems			
	Step 1	Step 2	Step 3
Demographic variables	Gender	Gender	Gender
Main effects		Problems Collective self-esteem	Collective self-esteem
Interaction effect			Collective self-esteem x problems

Examination of this table shows that the dependent variable of grade point average is significantly influenced by problems at a main effect level and by the interaction effect of problems and collective self-esteem. Further inspection of the table reveals that gender, problems, and collective self-esteem are significant at a main effect level

in the prediction of perceived stress. The interaction between collective self-esteem and problems is also a significant predictor of perceived stress.

The overwhelming finding in the context of the research objectives comes from further analysis of the interaction effects that occur between problems and the two measures of cultural identity in the prediction of grade point average and perceived stress. In the prediction of grade point average it was found that a high collective self-esteem acted to buffer the negative consequences that increased problems has on grade point average. Similarly, in the prediction of perceived stress, among students who experienced a high degree of problems, those who were high in Māori identity reported significantly less stress than those who were low in Māori identity. Finally, collective self-esteem was found to moderate the relationship between problems and stress in that under conditions of low problems, Māori students with high collective self-esteem reported less stress than those with low collective self-esteem.

CHAPTER FOUR – DISCUSSION

This study has attempted to provide further insight into academic outcome and cultural identity in Māori university students by examining the relationship between these variables and a number of other individual and contextual variables that other researchers have identified as being particularly pertinent to academic outcome and cultural identity. The final chapter of this piece of research will be presented in the following format.

1. A summary of the findings of the present study in the context of the research objective's including an interpretation of their meaning and a consideration of how these findings fit with previous research.
2. A consideration of the implications of these findings.
3. Acknowledgement of the limitations of this study and recommendations for future research directions.

4.1. The Findings: A Summary and an Interpretation

Based on the findings of this study a number of tentative speculations are possible. One of the major differences in approach taken by the present study in contrast to other similar studies was that it accessed actual academic records as well as inquiring into subjective measures in order to measure academic achievement. Previous New Zealand research has preferred to use self-report measures of academic achievement

(e.g. Tofi et al, 1996; Seymour, 1999). Seymour (1999) noted that a limitation of his study was the use of a self-report measure of academic achievement, he went on to discuss the fact that using an objective measure of academic outcome (e.g. GPA) would have increased the validity of his study. Using grade point average ensures that the operationalisation of academic outcome is a measure of *actual* performance rather than the self-evaluation of respondents.

The first objective of this study was to identify obstacles, impediments, and positive factors that contribute to the academic outcome of Māori university students. Overall the present sample was found to be achieving with a mean grade point average of 2.55 (corresponding with an actual grade of C+ to B-). The majority of the sample estimated their grades to be mostly B's (GPA = 4).

Scores on the Student Problem scale were demonstrated to be significant predictors of grade point average among Māori university students. In light of this, a descriptive analysis of responses to this scale was conducted in order to shed some light on the particular problems that were most frequently identified by the current sample of Māori students as being intrusive. *Balancing the demands of work and study, balancing study with family commitments, concern over whether ones degree will give them the education they need for the workforce, learning the academic language, understanding what is required to do well on assignments*, and *adjusting to the style of teaching at Massey University* were identified the most frequently as being problems for this group of students. The problems most frequently reported by this group of students (balancing study with other responsibilities, workload issues, adjusting to academic life) are well documented in the results of other studies (e.g.

Tofi et al, 1996; Seymour, 1999). This indicates that the difficulties experienced by Maori students are not altogether dissimilar to those experienced by other groups of students. The problems of balancing study with work and balancing study with family commitments were the two most commonly cited problems. This indicates that a high number of Māori students have to contend with multiple responsibilities at the same time as dealing with the demands of tertiary study. Learning the academic language, understanding what is required to do well on assignments, and adjusting to the style of teaching at Massey University were the fourth, fifth, and sixth most commonly reported problems respectively. A high rating for each of these problems is indicative that a high proportion of Māori students are having difficulty in adapting to academic life.

Responses were also compared and contrasted for demographic sub-groups of gender and age. Notable among the results of this analysis were that the most concerning problem for those aged less than thirty was paying back their student loan, this problem was ranked seventh by those aged over thirty indicating that younger students are more likely to have student loans than more mature students. On the other hand the two most pervasive problems for those aged over thirty were *balancing study with family commitments* and *balancing the demands of work and study.* The mean responses to these difficulties were ranked tenth and fourth respectively, by those aged less than thirty indicating that older students are more likely to have multiple responsibilities in terms of work, family, and study.

The measurement tool used to assess student problems was constructed specifically for the purposes of this study. Although its significance in the prediction of grade

point average and perceived stress gave it some validity in the context of the present study, it does not purport to be exhaustive of all problems experienced by Māori university students. Future research attempting to identify obstacles and impediments to academic outcome in Māori students in a more comprehensive manner would focus on further development of the Student Problem scale. A more complete understanding of the most salient difficulties experienced by Māori students would allow inferences to be made as to whether the academic experience and the difficulties encountered are indeed different for Māori as opposed to non-Māori as is inferred by Potter (2000).

The second objective of this study was to examine the inter-correlations of cultural identity and academic outcome with the range of individual and contextual variables assessed as part of this research. Student problems, psychological symptoms, perceived stress, and general self-efficacy were all examined and their variation in relation to cultural identity and academic outcome was noted.

Grade point average was found to be negatively associated with student problems, psychological symptoms, and two of its subscales somatic distress and performance difficulty and positively associated with grade expectations. It is difficult to ascertain the causal direction of the relationship between grade point average and psychological symptoms, however a possible interpretation of this result is that psychological symptoms are an example of an internal barrier to positive academic outcome in the same way that the Student Problem scale is representative of external barriers and impediments to academic outcome. In common with grade point average, grade expectations correlated negatively with psychological symptoms and

its somatic distress subscale. The presence of a significant positive correlation between grade point average and grade expectations supports the assertion of Frucott and Cook (1994) that self-report measures correlate highly with actual GPA's. However, the additional significant associations of grade point average with other variables such as psychological symptoms support Seymour's (1999) reservations regarding the validity of self-report measures of academic outcome.

The significant association between student problems and grade point average concurs with the results of previous studies that have explored the association between student problems and academic achievement (e.g. Hackett et al, 1992; Tofi et al, 1996). Contrary to the predicted relationship, student problems were not associated with either grade expectations or motivation to seek higher qualifications. Low variability in the academic outcome measures may have contributed to the absence of a significant relationship between these variables. Additionally the small sample size may have decreased the capacity of the correlational analysis to detect smaller associations between variables. Alternatively, it may indicate that some students who experience a high degree of problems may still expect to do well and remain motivated to seek higher qualifications.

The negative association between psychological symptoms and both grade point average and grade expectations is consistent with the work of Wheeler and Magaletta (1997) who found a significant association between academic performance and a measure of psychological wellbeing. The findings of this study differ slightly from those of Brackney and Karabenick (1995) who found that an *indirect* relationship exists between psychopathology and academic performance whereby students with

poor psychological adjustment exhibited inferior learning strategies and thus inferior academic performance. This inconsistency may be explained by the fact that the current study assessed students in terms of the prevalence of a group of symptoms whereas Brackney and Karabenick assessed for the presence of a diagnosable psychopathological illness. The negative association found between psychological symptoms and grade point average in this study is noteworthy. One interpretation of this finding may be that a high level of psychological symptoms impairs certain cognitive domains such as attention and concentration. Lowered functioning in these areas is likely to be detrimental to academic performance.

The third measure of academic outcome was motivation to seek higher qualifications. Greater motivation was significantly associated with higher general self-efficacy, higher collective self-esteem, and correlated positively with three of its subscales (Public CSE, Membership CSE, and Identity CSE). Motivation to seek higher qualifications was also negatively associated with perceived stress, psychological symptoms and each of it subscales (somatic distress, general distress, and performance difficulty) indicating that students who report high levels of stress, and experience a high degree of psychological symptoms may be less motivated to seek higher qualifications.

The finding that students with greater general self-efficacy are more motivated to seek higher qualifications is not particularly surprising given that general self-efficacy assesses one's personal perception of their ability to cope under stress. These students with greater coping capacity are likely to feel more confident with their ability to cope with post-graduate study. However, an interesting finding in the

context of this study was the positive association found between collective self-esteem, or feeling good about your ethnic group membership, and motivation to seek higher qualifications. This finding concurs with that of Durie (1998) who demonstrated that a more secure Māori identity was associated with higher educational aspirations. Although further exploration of this finding is necessary, "it implies that" Māori students seeking post-graduate qualifications may be likely to have a relatively positive collective self-esteem. A possible interpretation of this phenomenon, from a 'collectivist' point of view, is that Māori who have a more positive cultural identity are more aware of the need for greater Māori representation at higher levels of tertiary education. Therefore, they are more motivated to contribute to filling the void, alluded to by Jefferies (1997) that currently exists. An alternative interpretation from a more individual perspective could be that Māori students with a more positive cultural identity may have greater self-confidence than those with a low cultural identity. This increased self-assurance may then generalise to the academic environment, thus strengthening their personal belief that they will be able to cope with post-graduate study.

Motivation of students to seek higher qualifications was not significantly associated with either grade point average or grade expectations indicating that motivation may be independent of actual academic achievement. Motivation to seek higher qualifications was measured by using four discrete categories. This may have contributed to a low variability in this measure and therefore decreased its sensitivity to detect significant associations with other academic outcome variables.

The findings of this study with regard to 'motivation to seek higher qualifications' raise significant issues that could well benefit from further exploration. As mentioned in an earlier section Māori participation at higher levels of tertiary education has important societal implications. These findings suggest that in an environment in which stress and psychological symptoms can be minimised and general self-efficacy can be maximised it is likely that Māori students will be more motivated to seek higher qualifications. Although such an environment could be considered 'idealistic', it is not unreasonable to suggest that future research should focus on identifying interventions that might create an environment in which Māori students are more motivated to seek higher qualifications.

The second major difference that makes this study unique is that it has measured cultural identity quantitatively using two measures, the Collective Self-esteem scale (Luhtanen & Crocker, 1992), and the Māori Identity profiles (Durie et al, 1996). Overall the current sample indicated a positive level of cultural identity. Appropriately, the two measures employed to assess this construct displayed a significant positive correlation.

The presence of a significant positive correlation between Durie et al's Māori Identity measure (1996) and Luhtanen and Crocker's Collective Self-esteem scale (1992) gives concurrent validity to their conceptualisation as dual measures of cultural identity. The Durie et al scale showed significant correlations with the Membership CSE and Identity CSE subscales. The membership subscale assesses how well group members feel they function within their ethnic group whilst the identity subscale assesses the significance that ethnic group membership has to ones self-concept.

Given that the Māori Identity measure assesses individuals in terms of their involvement in, and knowledge of certain cultural practices these correlations are not surprising.

Cultural identity as measured by the Durie et al (1996) scale was not associated with either private CSE or public CSE. These subscales respectively measure how individuals evaluate their ethnic group privately, and how individuals perceive that others evaluate their ethnic group. The absence of significant associations between Māori identity and these subscales implies that Māori students level of cultural involvement is not associated with how they privately evaluate Māori as a group or how they perceive that non-Māori evaluate Māori as a group. This finding is not particularly noteworthy, however it does give an indication of some of the major components as well as some of the boundaries of the Durie et al Māori identity measure.

In terms of its relationship with other variables a high score on the Māori identity profile was associated with lower levels of perceived stress. Viewing perceived stress as a health predictor, this finding can be compared to the findings of Durie et al. (1996) who established the positive health benefits of having a secure Māori identity. Further, regression analyses indicated that Māori identity was a significant predictor of perceived stress. An implication of this finding for Māori students is that increasing their involvement in the Māori cultural practices that have been identified by Durie et al (1996) as being particularly relevant to a Māori identity, may act to reduce levels of perceived stress. The findings of this study with regard to Māori

identity and perceived stress also provide possible indicators of the mechanism by which Māori identity and physical health are positively associated.

The domains assessed by the Maori Identity measure (e.g. marae participation, involvement with whanau, links to other Māori) represent a set of components that are likely to augment one's social support network. Previous research has shown the positive psychological benefits of social support in terms of stress and wellbeing (e.g. Coyne & Downey, 1991; Tofi et al, 1996). A possible interpretation of the findings of this study is that cultural identity, as conceptualised by the Durie et al measure, may act as a form of social support for Māori students acting to proliferate their coping resources, thus decreasing their susceptibility to stress.

In regards to its relationship with other variables, higher collective self-esteem was associated negatively with psychological symptoms and each of its subscales. This finding concurs with that of Arroyo and Zigler (1995) who found that cultural identity was negatively associated with measures of anxiety and introjective depression. In addition to its association with motivation to seek higher qualifications, high collective self-esteem was also associated with less perceived stress, and greater general self-efficacy. The four subscales of collective self-esteem did not produce any significant associations in addition to those displayed by the overall score.

Overall, these results have shown collective self-esteem to be associated with a number of desirable psychosocial outcomes, namely decreased psychological symptoms, decreased perceived stress, and increased general self-efficacy. It is possible that Māori students who are more content and comfortable with their ethnic

identity (i.e. higher collective self-esteem) may be less prone to suffer from stress, and in turn less likely to suffer from psychological symptoms. Students with high collective self-esteem are also likely to be more self-assured and comfortable with their identity, this self-assurance is likely to be manifested by a greater general self-efficacy.

In summary, the most significant trend that emerges from the correlational analyses conducted is that cultural identity in the various ways that it has been operationalised is associated with a number of positive psychosocial outcomes. This trend is consistent with previous research that has reported the various benefits of having a positive cultural identity (e.g. Hughes & Demo, 1989; Arroyo & Zigler, 1995; Durie, 1998). These findings complement those of Durie (1998) who reported the positive physical health benefits of a secure Maori identity.

Objective three of the present research was to test the hypothesis that cultural identity acts to protect Māori students from the potential negative effects that a high degree of problems may exert upon academic outcome and psychological wellbeing. The findings have provided support for the proposed model whereby cultural identity moderates the relationship between student problems and academic outcome, and the relationship between student problems and psychological wellbeing.

The first of the two significant regression analyses showed that the grade point average of Māori students with high collective self-esteem remained relatively stable under conditions of low problems and under conditions of high problems. On the other hand, among students with low collective self-esteem, grade point average was

significantly lower under conditions of high problems. The possibility that cultural identity protects Māori students from the negative academic influence of problems is a particularly important one. While it is important for the university to continue to work to minimise barriers to the academic achievement of their students, there are some difficulties that fall outside of the university's domain of control and in some cases are unavoidable (e.g. balancing study with family commitments, homesickness). The findings of this study suggest that even if these problems are unable to be avoided, a positive cultural identity can ensure that their negative academic effects can be minimised. The question of *how* cultural identity exerts this moderating influence cannot be ascertained from the current study, however tentative speculations are possible. Returning to the possibility that cultural identity acts as a form of social support, the supportive resources of Māori students with high cultural identity may be superior to those of students with low cultural identity. Thus, when difficulties are encountered, students with a more positive cultural identity may be better equipped to cope with these problems therefore diminishing the negative academic effects that arise from experiencing a high degree of problems.

Hirini's (1999) theory whereby Māori low in cultural identity experience a form of 'culture shock' represents another theoretical framework that may help to explain the moderating influence of cultural identity. Hirini proposes that Māori with low cultural identity experience 'culture shock' when they are placed in unfamiliar situations, for example a marae setting. Culture shock is manifested by adverse psychological reactions such as increased anxiety. Generalising Hirini's theory to the findings of this study, one might suggest that Māori students with low cultural identity are less comfortable with their ethnicity in the academic environment

resulting in a poor environmental fit that may be otherwise explained as a form of culture shock. These individuals who are low in cultural identity may interpret academic difficulties as further confirmation of their inability to 'fit in' to academic life thus exacerbating the degree of their culture shock. This culture shock may result in the materialisation of psychological symptoms as is suggested by Hirini. The current study has already demonstrated an association between psychological symptoms and poor academic outcome and discussed the possibility that psychological symptoms may impair academic performance by compromising cognitive domains such as attention and concentration.

Research investigating the moderating influence of cultural identity in the prediction of academic outcome is extremely sparse. Chatman's (1999) study failed to affirm his hypothesis that cultural identity moderates the relationship between stereotype threat and academic achievement. There are however a number of differences between Chatman's study and the current research that explain this inconsistency. Firstly, Chatman proposed that the effect of stereotype threat on academic achievement was moderated by cultural identity. Stereotype threat involves the confirmation of negative societal stereotypes. This study proposed that the effect of student problems on academic outcome was moderated by cultural identity. This may indicate a genuine difference in the way that cultural identity interacts with each of these variables. Secondly, in contrast to Chatman's research the present study has employed more than one measure of cultural identity, bearing in mind that cultural identity as measured by the Durie et al scale did not interact with student problems in the prediction of grade point average. Finally, the present study used two measures of cultural identity that have been used and validated by other researchers. Chatman's

study involved the development and use of her own measure of ethnic identity. Therefore on closer inspection, the apparent inconsistencies between the findings of the present study and Chatman's work are not particularly surprising.

Support was also provided for the second proposed model whereby cultural identity moderates the effect of student problems on psychological wellbeing. Collective self-esteem was shown to interact significantly with student problems in the prediction of perceived stress. Although previous studies have found associations between cultural identity, psychological wellbeing, and environmental stressors (e.g. Verkuyten & Lay, 1998; Romero, 1998; Bettencourt & Dorr, 1998), the present study is rare in that it has provided support for a model whereby cultural identity acts to moderate the relationship between environmental stressors and wellbeing. Under conditions of high problems Māori students with high cultural identity reported similar levels of stress to students with low cultural identity. However, under conditions of low problems, Māori students with low collective self-esteem were found to report significantly higher levels of stress than students with high collective self-esteem. This finding differs from the proposed relationship that cultural identity protects Māori students from the negative psychological impact of experiencing a high degree of student problems. It does however provide further support for the positive benefits of a positive cultural identity. This finding indicates that students with low collective self-esteem report high levels of perceived stress, even under conditions in which problems are low. A possible interpretation of this phenomenon could be that low cultural identity is associated with a number of *other* difficulties (not assessed by the Student Problem scale). These additional stressors may result in Māori students with

low cultural identity experiencing higher stress even when the difficulties assessed by the Student Problem scale are not particularly high.

Other explanations for this phenomenon may come by drawing parallels to the 'plasticity' hypothesis of Ganster and Schaubroeck (1991). These researchers proposed that workers with lower self-esteem are generally more sensitive to environmental stressors and therefore more likely to develop symptoms in response to job stress. Flett et al (1995) supported this theory in a study that assessed levels of stress in relation to job-tension when they found that under conditions of high job tension, workers with low self-esteem suffered significantly greater levels of stress than workers with high self-esteem. Generalising the 'plasticity' model to the results of the current study one might speculate that among Māori students a strong cultural identity increases ones resilience to the difficulties that academic life presents. Alternatively those with low cultural identity appear to be more sensitive to problems and respond by experiencing higher levels of stress. This theory is equally applicable to the relationship discussed whereby cultural identity moderates the relationship between student problems and grade point average.

In other regression analyses, the Māori identity scale used as part of this study failed to produce a significant interaction effect with student problems in the prediction of grade point average and perceived stress. There are a number of possible explanations for this. Developed primarily as a means of placing Māori in discrete identity profiles, a more systematic method of weighting individual items may need to be devised in consultation with the test authors whereby individual items are weighted based on their relevance to a Māori identity. Secondly, the Durie et al

measure primarily assesses ones level of involvement in certain Māori cultural processes providing a more behavioural conceptualisation of cultural identity. Alternatively, the Collective Self-esteem scale is more concerned with how one feels about their ethnic group membership representing a more psychological construction of cultural identity. This may be indicative of a genuine difference in the relationship that each of these slightly different conceptualisations has in relation to student problems and the outcome variables. This re-emphasises the need for further research into *how* cultural identity exerts its moderating effect in order that a greater understanding can be gained of the specific mechanisms by which it is contributing to superior academic achievement and improved psychological wellbeing.

The Student Problems scale failed to show significant associations with the other two measures of psychological wellbeing, psychological symptoms and general self-efficacy. Therefore the Student Problem scale was not considered as a predictor of either of these two constructs. A large body of research has supported the notion that problems in an academic setting are predictive of various conceptualisations of psychological wellbeing (e.g. Lu, 1994; Jou & Fudaka, 1996; Tofi et al, 1996). Therefore, the non-significance of these relationships in the present sample is unlikely to be a reflection of the true nature of the interaction between these constructs. Further refinement of the Student Problem scale may address some of these inconsistencies. This could be done by creating a more comprehensive measure that is representative of all the various dimensions that contribute to the problems experienced by Māori students.

4.2. Implications of the Research Findings

These findings have underlined a number of difficulties that have been identified by Māori university students as being particularly salient in the context of their academic experience. A greater understanding of these problems is likely to be beneficial for students, lecturers, and at a more global level those involved in making and implementing policy. This increased awareness will facilitate the process whereby measures can be taken to both avoid and minimise the prevalence of particular problems. A number of the difficulties commonly cited by Māori students, such as problems balancing work and study and problems balancing study with family commitments, are beyond the control of university services. However, time-management courses teaching Māori students how to better plan and utilise the time they do have may decrease the prevalence of these difficulties. This sample of students has also identified a group of problems that can be broadly categorised as academic adjustment difficulties as being particularly pervasive. Interventions such as bridging courses aimed specifically at Māori students, particularly those who are returning to university having spent some time outside of an academic environment, may help to make the transition to university life easier. These courses might call on the experiences of past Māori students who have completed their qualifications to share their academic experiences as well as discuss some of the factors that contributed positively to their tertiary education.

The positive association that was found between cultural identity and a range of positive psychosocial outcomes is of particular significance and carries with it a number of implications. Educating Māori students so that they become more aware

of the positive association between these variables may facilitate a process whereby students take steps to build up their cultural identity. The responsibility for augmenting ones cultural development for the most part befalls the individual. Massey University makes Māori resource rooms available specifically for use by Māori students within most of its departments. In addition, some departments also run tutorial groups exclusively for Māori students. Given that these represent university initiatives that are likely to enhance or at the very least maintain a sense of identity for Māori students, assessing whether Māori students are taking advantage of these resources is an area worthy of further exploration. Brown (1999) developed a cultural identity program and then used an experimental design to demonstrate the various benefits of an enhanced cultural identity among a group of elementary school children. Although the development of such a programme for an adult population is not particularly feasible it does demonstrate that cultural identity is a psychological construct that *is* particularly amenable to change throughout ones lifetime.

The notion that a positive cultural identity acts to protect Māori students from the negative academic effects imposed by experiencing a high degree of problems is a particularly significant one. The means by which a strong cultural identity makes Māori students more resilient to the negative academic consequences of experiencing many difficulties remains unclear. This firstly highlights the need for the development of a theoretical framework that addresses the specific mechanism by which cultural identity exerts its moderating effect. Several potential theories have been offered. Generalisation of the 'plasticity' hypothesis of Ganster and Schaubroeck (1991), and Hirini's (1999) theory of 'culture shock' are two examples of positive first steps in the development of such a framework. The significant

moderating effect of cultural identity does support a number of recommendations. It illustrates that the strengthening of cultural identity among Māori students could act as a form of *primary prevention* in terms of decreasing the impact that certain environmental stressors have on their academic performance. It provides justification for the continued investment of university resources in to Māori study rooms, Māori tutorial groups, and other initiatives that are likely to enhance and foster the development of cultural identity within an academic setting. Among other things, these initiatives create a space in the university environment that Māori students can call their own, instilling in them a sense of belonging within the university, and acknowledging the uniqueness of their identity.

4.3. Limitations of this Study and Suggestions for Future Research

There are a number of limitations to the present study that need to be acknowledged. These areas are discussed below in more detail and suggestions for future researchers are offered.

1. This study was conducted with a specific student population and has generated interesting findings with regard to this group. However, the non-random nature of the sample limits the extent to which generalisations can be made to other groups of Māori students. In light of this, it is inappropriate to consider these findings as representative of the situation among the wider population of Māori university students studying in New Zealand. An initial limitation of the current study was the problematic

nature of accessing students of Māori descent, who tend towards the lower end of the scale in cultural identity. The method of participant recruitment used in the current study resulted in a propensity to over-sample students who were high on this construct. Indeed, on the whole students scored quite high on the two measures administered to measure cultural identity. Future research could use alternative participant recruitment methods in order to obtain a sample that displays greater variance in cultural identity. One possible solution to this problem could be to use university records to access students who identify as Māori on the academic register. A random sample could then be drawn from this population. However, a study of this kind would raise a number of ethical issues regarding confidentiality, in terms of the appropriateness of accessing registry records without informed consent.

The academic diversity of this group is also minimal with a high proportion of respondents studying towards either a Bachelor of Arts, or a Bachelor of Social Work. It should be emphasised that this distribution is not altogether atypical of the percentage of Māori studying in different fields at Massey University, it does however limit the extent to which generalisations can be made across different qualifications. Future research might use a stratified sampling method by randomly selecting students in proportion with the percentage of Māori students studying towards each qualification. One potential difference that could be expected among Māori students studying in field's in which their level of representation is lower, is a decreased level of cultural identity. This may

occur due to decreased contact with some of the dimensions that are considered pertinent to a Māori identity by Durie et al (e.g. links with other Māori).

2. An associated issue is the lower than expected response rate that was obtained. This may have been due to the timing of the data collection, which took place towards the end of the academic year just prior to final examinations. The small sample size (n=72) raises issues of statistical power. Of particular note was the number of respondents (n=14) who failed to return their grade access forms. This resulted in the two regression analyses involving grade point average as a dependent variable being reduced to a sample size of fifty-eight. The number of independent variables used in the regression analyses conducted in this study (6 including interaction effects) raises issues pertaining to sample size. While the case to IV ratio (12:1) is well above the minimum requirement of 5:1 suggested by Tabachnik and Fidell (2000), it remains well below the 20:1 ratio that researchers argue to be optimal (Millar, 1996). Using a larger sample size would strengthen the power of the research design and consequently the ability to show significance when effect sizes are relatively small. The Student Problem scale is currently limited by its 'unidimensional' nature and could benefit from further refinement. A more specific study of student problems could aim to develop this scale further by administering it to a larger sample. A factor analysis could then be conducted, thus facilitating the identification of the dimensions that make up academic problems among Māori university students.

3. The statistical analyses used in this study have exposed a number of significant relationships. The use of regression analyses has facilitated further exploration of the channel of association between variables (e.g. Tofi et al, 1996; Seymour, 1999). However, it is important to note that the cross-sectional nature of this research does not allow the causal direction of these relationships to be ascertained. For example, the regression analyses conducted suggested that student problems were predictive of grade point average. A longitudinal study would allow one to firstly assess student problems over the academic year, and then assess actual grades at the end of that year thus providing a less ambiguous indication of the predictive validity of student problems.

4. The various benefits of a positive cultural identity and its validity as a moderating variable have been identified and discussed in this study. However, as has already been mentioned in this chapter, the exact means by which cultural identity exerts its influence remains unclear. Future research should look at further delineating the nature of this relationship by developing a theoretical framework. The 'plasticity' hypothesis of Ganster and Schaubroeck (1991), Hirini's (1999) theory of 'culture shock', and the theory that cultural identity acts as a form of social support have already been discussed as having potential in explaining the means by which cultural identity exerts its moderating influence. A theoretical framework would allow suggestions to be made regarding how Māori students experiencing a high degree of adversity in the academic

environment can best be assisted. A possible research design might aim to assess the experiences of graduate Māori students and delineate the positive factors that contributed to them successfully obtaining a qualification as well as identifying the means by which they coped with adversity.

In summary, the research reported in this thesis has achieved its objectives. Particularly pervasive obstacles and impediments to the achievement of Māori university students have been identified. Previous research has described the under-achievement of Māori within the education system (e.g. Te Puni Kokiri, 2000; Potter, 2000), the current study has sought to uncover some of the particular barriers to their achievement. The findings of this study have also shown significant associations between cultural identity and a number of positive academic and psychological outcomes.

Finally, the models proposed and depicted in Figures 1 and 2 were tested and supported by the results. Cultural identity was indeed found to act as a protective factor in regards to student problems. The discovery of this relationship has raised a number of noteworthy issues and allowed a number of recommendations to be made, in particular the potential of cultural identity as a means of primary prevention from the negative consequences of problems. The ultimate goal of future research should focus firstly on further delineating the factors, both positive and negative, which contribute to the current level of performance of Māori university students. This

would allow further recommendations to be made promoting the academic advancement of Māori within tertiary educational institutions.

This study has produced a number of products of value to social scientists, to policy makers and implementers of policy, and to those involved in the delivery of tertiary education. In doing so it has underlined the importance and usefulness of assessing Maori students experiences of university and the antecedents and consequences of that experience.

First, there is value in obtaining baseline measures against which subsequent measures can be compared to give a knowledge of the current state of affairs as well as allowing trends of change to be identified and inferences to be made as to the direction and nature of future change. This will allow important questions to be addressed such as whether or not tertiary study is becoming more 'problematic' for Māori students, and how the cultural identity of Māori university students has evolved over time. It will also allow areas of stability and areas of change to be identified.

Second, there is value in knowing how the academic experiences that have been assessed in this study are distributed among the Māori student community in order that specific interventions can be targeted at specific demographic sub-groups. The present study has looked at the difference between the types of problems experienced by demographic sub-groups based on gender and age. Further research might compare groups on the basis of socio-economic status, marital status, or course of study.

Third, there is value in understanding how Maori integrate their experiences at university into their academic achievements and their overall quality of life. Research into these variables can facilitate a greater understanding of, what aspects of the individual are more important than others in determining outcomes, *how* some Māori students are able to better cope with adversity and difficulty within the academic environment than others, and how those who fail to adapt successfully to the academic environment can best be helped.

Although the "usefulness" of research in the area of Māori participation in tertiary education may have to be displayed over a period of time, it could be strongly argued that the "importance" of research in this area does not need to be defended. Those that would lay claim to expertise regarding what is best for society would agree that a situation whereby Māori university students are able to advance through a westernised education system while maintaining links to their Māori heritage represents a state of affairs to be highly coveted. The findings of this study suggest that the words of Sir Apirana Ngata's whakatauki that open this thesis are as applicable in the present day as they were at the turn of last century when he called for Māori to take in their hands the tools of the Pakeha as a means of sustaining them, while always carrying in their hearts the treasures that have been passed down to them by their ancestors.

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APPENDICES

Appendix 1: Scoring system for Durie et al Maori Identity measure

			Score
(1)	Do you identify as Maori? (Please circle one answer)		
1	Yes		2
2	No		0
(2)	How many generations of your Maori ancestry can you name?		
1	One generation (parents)		1
2	Two generations (grandparents)		2
3	Three generations (great-grandparents)		3
4	More than three generations		4
(3)	Is there at least one marae that you regard as *your* marae?		
1	Yes	Please name if you're able	2
2	No	(go to question 5)	0
(4)	Over the past 12 months how often did you go to *your* marae?		
1	Not at all		1
2	Once		2
3	A few times		3
4	More than six times		4
5	More than once per month		5
(5)	In terms of your relationship with your whanau, would you say that your whanau plays…		
1	A very large part in your life		4
2	A large part in your life		3
3	A small part in your life		2
4	A very small part/no part in your life		1
(6)	Do you have an interest in Maori land as an owner, part owner or beneficiary?		
1	Yes		2
2	No		0

3	Not sure/don't know	0

(7) This question is to do with your contacts with people in general. Circle the answer below which best describes the types of people you have the most contact with.

1	Mainly Maori	4
2	Some Maori	3
3	Very few Maori	2
4	No Maori	1

(8) What is your overall ability with te reo Maori?

1	Have no ability	1
2	Know some Maori to a very basic level	2
3	Have a good level of understanding of Maori but do not speak it	3
4	A learner of Maori whose knowledge is basic but steadily progressing	4
5	A learner of Maori for some time and have an advanced knowledge	5
6	Fluent in Maori having learned it as a second language	6
7	A native speaker of Maori	7

The Maori Identity score was therefore the sum of the individual responses to the items on the above scale. A similar method was used by Hirini and Flett (1999) to quantify this particular measure.

Appendix 2: The Calculation of Grade Point Average

Each grade is assigned a numerical value according to the following scale:

- A+ 8
- A 7
- A- 6
- B+ 5
- B 4
- B- 3
- C+ 2
- C 1
- R 1
- AEG 1
- D 0
- E 0
- F 0
- DNC 0

In calculating grade point averages the formula is as follows:

$$\Sigma(\text{grade value x point value of the paper}) / \Sigma(\text{total points taken})$$

N.B. Where students have withdrawn from papers, indicated by a WD code, these papers are omitted from the calculation. Additionally, some subjects have practical papers that are assigned either pass (P) or fail (F) grades. Because P grades cannot be reduced to a numerical value these have also been omitted from calculations.

Appendix 3: Information Sheet

Cultural Identity and Academic Achievement in undergraduate Maori university students

INFORMATION SHEET FOR PARTICIPANTS

Ko Ngongotaha te maunga
Ko Rotorua te roto
Ko Te Arawa te waka
Ko Ngati Whakaue te iwi
Ko Ohinemutu te whare tipuna
Ko Tama te Kapua te tangata
Ko Simon Te Manihi Bennett taku ingoa

Kia ora koutou. This research is being undertaken by Simon Bennett as part of his Masterate work at Massey University. He is working under the supervision of Dr Ross Flett and Mr Paul Hirini. If you would like to contact Simon Bennett he can be contacted at (04) 387 2413, and if you would like to contact either Ross Flett or Paul Hirini they can both be contacted through Massey University on (06) 356 9099. In addition you can write to any of the above people c/o School of Psychology office, Massey University, Private Bag 11222, Palmerston North.

What is this research about?
The research aims to examine cultural identity amongst Maori university students and assess its relationship with certain aspects of student life, and most notably academic achievement. The study will investigate a number of student characteristics and examine the way that these vary relative to cultural identity. A broad primary goal of this research is to uncover means by which learning conditions and academic success for Maori students can be refined and improved.

What will I be asked to do?
If you decide to participate, you will be asked to complete a questionnaire. In addition and with your consent, you will be asked to disclose your student identification number, which will be used to obtain your grade point average for your Massey university academic record. To ensure that your grades remain confidential, neither the researcher nor his supervisors will be in a position to link your grades with either your name or your identification number. Grades will be retrieved from the Massey University database by an independent third party (an administrative member of the School of Psychology) these grades will be converted to a grade point average and will be linked to your questionnaire by a code. Data will be collected in such a way that all individual names and identification numbers will remain anonymous to the researcher and his supervisors. At the completion of the research project procedures have been put in place to ensure that all raw data will be permanently

disposed of. Please note that completion of the questionnaire implies your consent to be involved in this research.

How much time will be involved?
The questionairre will take 20-30 minutes to complete.

What can you expect from the researcher?
If you choose to take part in this study you have the right to withdraw at any time, and do not have to answer any questions that you do not want to. You can also ask any questions about the study at any point during the study. Whether you take part in this study or not will have no bearing on any services you receive or your membership within any bodies within the university, nor will it have any influence on your enrolment or progress in any particular course of study. The information you provide will be held in complete confidence by the researcher and his supervisors, and will be used only for the purposes of this research. If you wish, a summary of the findings of the research can be provided to you. We will send this to you at the conclusion of the project if you request it.

I would like to invite you to participate in this study. If you have any queries or concerns about your rights as a participant in this study, you may wish to contact either Simon Bennett, Dr Flett, or Mr Hirini (see contact details above).

Thank you very much for your consideration,

Simon Bennett

Appendix 4: Informed Consent Form

RELEASE OF CONFIDENTIAL INFORMATION CONSENT FORM

I hereby **agree/do not agree** (please circle one) to the release of information regarding my Massey University grades, via the Massey University database on the understanding that these grades will be accessed by an independent third party and that at all times my personal records will remain **strictly confidential** and my identity will remain **anonymous.** I also understand that my Massey University Identification number will be used to access this information.

Signed: .....

Name: .....

Date: .....

N.B. Please complete the release form and return along with the grade access form in the envelope addressed to: Robyn Knuth, Cultural Identity and Academic Achievement Study, School of Psychology, Private Bag 11 222, Palmerston North.

Appendix 5: Questionnaire

Cultural Identity and Academic Experiences Questionnaire

Prepared for Maori university students studying at Massey University 2000

For your information: In completing this questionnaire please note that taking part is completely voluntary, and that you are free not to complete any or all question(s) within it. Please also understand that your identity will remain completely anonymous. The data you provide will be treated in strict confidence.

This questionnaire is best completed alone, that is, without any discussion with others (e.g. other students). Please be as honest as you can, there are of course no 'right' or 'wrong' answers to any of these questions.

Please note that by completing the questionnaire you agree to participate in this study under the conditions set out in the Information Sheet. **If you choose to complete the questionnaire, please place it in the Freepost envelope addressed to Simon Bennett, Cultural Identity and Academic Achievement Study, School of Psychology, Private Bag 11 222, Massey University, Palmerston North and return it via post at a time that suits you.** Finally, at the back of this questionnaire (page 12) you are offered the opportunity of receiving a group summary of the results of this study. If you wish to be posted this summary upon completion of this study, please indicate by ticking the box provided. Your time and help are very much appreciated, best wishes for your studies. Kia kaha tonu. Kia ora.

Kei te mihi ki a koe mo to tautoko o tenei kaupapa.

Na Simon Bennett
Masterate student
School of Psychology
Massey University
Palmerston North

Questionnaire code number:_____

SECTION A

This first section asks a series of demographic questions. These are to help provide us with a better picture of the make-up of our sample group and will not be used to identify particular individuals.

1. Gender (please tick one)

   Male ❒

   Female ❒

2. Age group (please tick one)

   18-23 ❒

   24-30 ❒

   31-40 ❒

   41+ ❒

3. What are your iwi/tribal affiliation (if known)? _____

4. Are you studying?

   Full-time ❒

   Part-time ❒

5. What is your course of study (e.g. BBS, BA, etc)? _____

6. In what subject do you intend to major (e.g.Maori, Psychology, etc)?

_____

SECTION B

(1) Do you identify as Maori? (Please circle one answer)

1 Yes
2 No

(2) How many generations of your Maori ancestry can you name?

1 One generation (parents)
2 Two generations (grandparents)
3 Three generations (great-grandparents)
4 More than three generations

(3) Is there at least one marae that you regard as *your* marae?

1 Yes Please name if you're able
2 No (go to question 5)

(4) Over the past 12 months how often did you go to *your* marae?

1 Not at all
2 Once
3 A few times
4 More than six times
5 More than once per month

(5) In terms of your relationship with your whanau, would you say that your whanau plays…

1 A very large part in your life
2 A large part in your life
3 A small part in your life
4 A very small part/no part in your life

(6) Do you have an interest in Maori land as an owner, part owner or beneficiary?

1 Yes
2 No
3 Not sure/don't know

(7) This question is to do with your contacts with people in general. Circle the answer below which best describes the types of people you have the most contact with.

1 Mainly Maori
2 Some Maori
3 Very few Maori
4 No Maori

(8) What is your overall ability with te reo Maori?

1 Have no ability
2 Know some Maori to a very basic level
3 Have a good level of understanding of Maori but do not speak it
4 A learner of Maori whose knowledge is basic but steadily progressing
5 A learner of Maori for some time and have an advanced knowledge
6 Fluent in Maori having learned it as a second language
7 A native speaker of Maori

SECTION C

We are all members of different social groups or social categories. Some of these groups or categories pertain to gender, race, religion, nationality, ethnicity, and socio-economic class. In this section we would like you to consider your identity as a Maori and respond to the following statements on the basis of how you feel about your membership in this ethnic group. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the scale provided:

	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly
(1) I am a worthy member of the ethnic group I belong to.	1	2	3	4	5	6	7
(2) I often regret that I belong to the ethnic group I belong to.	1	2	3	4	5	6	7
(3) Overall being Maori is considered good by others.	1	2	3	4	5	6	7
(4) Overall my Maori identity has very little to do with how I feel about myself.	1	2	3	4	5	6	7
(5) I feel I don't have much to offer the ethnic group I belong to.	1	2	3	4	5	6	7
(6) In general, I'm glad to be a member of the ethnic group I belong to	1	2	3	4	5	6	7
(7) Most people consider Maori, on the average, to be more ineffective than other ethnic groups.	1	2	3	4	5	6	7
(8) My Maori identity is an important reflection of who I am.	1	2	3	4	5	6	7
(9) I am a cooperative member of the ethnic group to which I belong.	1	2	3	4	5	6	7

	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly
(10) Overall, I often feel that being Maori has disadvantaged me.	1	2	3	4	5	6	7
(11) In general, others respect my ethnic group.	1	2	3	4	5	6	7
(12) My Maori identity is unimportant to my sense of what kind of person I am.	1	2	3	4	5	6	7
(13) I often feel I'm a useless member of my ethnic group.	1	2	3	4	5	6	7
(14) I feel good about being Maori.	1	2	3	4	5	6	7
(15) In general, others think that the ethnic group I am a member of is unworthy.	1	2	3	4	5	6	7
(16) In general, my Maori identity is an important part of my self-image.	1	2	3	4	5	6	7

SECTION D

For this section we would like you to consider the following list of events or situations that other students have experienced as difficult. We would then like you to indicate on the scale provided the extent to which you agree that each of them has caused problems for you during your university studies by ticking the appropriate box.

To what extent do you agree that the following have been a problem during your university studies?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. Ability of lecturers to present information.	1	2	3	4	5
2. Ability of tutors to present information.	1	2	3	4	5
3. Achieving good results.	1	2	3	4	5
4. Adjusting to study after years in the workforce.	1	2	3	4	5
5. Adjusting to the style of teaching and learning at this university.	1	2	3	4	5
6. Balancing the demands of work and study.	1	2	3	4	5
7. Feeling to shy/whakamaa to contact lecturers	1	2	3	4	5
8. Conflict with the people I live with	1	2	3	4	5
9. Feeling dependant on parents/family	1	2	3	4	5
10. Financial conflicts with family/partner	1	2	3	4	5
11. Getting information from university administration	1	2	3	4	5
12. Finding work when I have completed my degree	1	2	3	4	5
13. Getting to know other students	1	2	3	4	5
14. Having enough time for my friends/family	1	2	3	4	5

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
15. Homesickness	1	2	3	4	5
16. Learning the academic language that is needed for essays, etc	1	2	3	4	5
17. Living up to other people's expectations	1	2	3	4	5
18. Having no-one to discuss my problems with	1	2	3	4	5
19. Other students failing to understand my culture	1	2	3	4	5
20. Paying back my student loan	1	2	3	4	5
21. Prejudice/Racism	1	2	3	4	5
22. Pressure from my parents regarding finances	1	2	3	4	5
23. The culture-shock of the university lifestyle	1	2	3	4	5
24. University study feels very impersonal	1	2	3	4	5
25. Balancing my study with my whanau/family commitments	1	2	3	4	5
26. Understanding what is required to do well on assignments	1	2	3	4	5
27. Understanding how to access academic support	1	2	3	4	5
28. Whether my degree is giving me the education I need for the work force	1	2	3	4	5
29. Getting behind with course work	1	2	3	4	5
30. Making myself understood	1	2	3	4	5

SECTION E

This section asks you to respond to a series of statements regarding your ability to cope under certain circumstances. Please use the scale provided to indicate how each of the statements applies to you personally.

	Not at all true	Barely true	Moderately true	Exactly true
1) I always manage to solve difficult problems if I try hard enough.	1	2	3	4
2) If someone opposes me, I can find means and ways to get what I want.	1	2	3	4
3) It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4) I am confident that I could deal efficiently with unexpected events.	1	2	3	4
5) Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
6) I can solve most problems if I invest the necessary effort.	1	2	3	4
7) I remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8) When I am confronted with a problem I usually find several solutions.	1	2	3	4
9) If I am in a bind, I can usually think of something to do.	1	2	3	4
10) No matter what comes my way, I am usually able to handle it.	1	2	3	4

SECTION F

Listed below are a number of statements concerning your personal perceptions of stress experienced over the past month. For each of the items below please indicate the extent to which you feel you have experienced these feelings over the past month on the scale ranging from NEVER (0) to VERY OFTEN (4).

		Never	Almost never	Sometimes	Fairly often	Very often
1.	In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2.	In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3.	In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4.	In the last month, how often have you felt confident in your ability to handle your personal problems?	0	1	2	3	4
5.	In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7.	In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8.	In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9.	In the last month, how often have you been angered because of things that happened that were outside of your control?	0	1	2	3	4
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

SECTION G

How have you felt during the past seven days including today? Circle the appropriate number to describe how distressing you have found these things over time.

	NOT AT ALL	A LITTLE	QUITE A BIT	EXTREMELY
Difficulty in speaking when you are excited.	1	2	3	4
Trouble remembering things.	1	2	3	4
Worried about sloppiness or carelessness.	1	2	3	4
Blaming yourself for things.	1	2	3	4
Pains in the lower part of your back.	1	2	3	4
Feeling lonely.	1	2	3	4
Feeling blue.	1	2	3	4
Your feelings being hurt easily.	1	2	3	4
Feeling others do not understand you or are unsympathetic.	1	2	3	4
Feeling that people are unfriendly or dislike you.	1	2	3	4
Having to do things very slowly in order to be sure you are doing them right.	1	2	3	4
Feeling inferior to others.	1	2	3	4
Soreness of the muscles.	1	2	3	4
Having to check and double check what you do.	1	2	3	4
Hot or cold spells.	1	2	3	4
Your mind going blank.	1	2	3	4
Numbness or tingling in parts of your body.	1	2	3	4
A lump in your throat.	1	2	3	4
Trouble concentrating.	1	2	3	4
Weakness in parts of your body.	1	2	3	4
Heavy feelings in your arms and legs.	1	2	3	4

SECTION H

This final section asks two questions related to your optimism and long-term goals you have of your study.

1. On the following scale please indicate the grades you expect to achieve for most of the papers for which you are enrolled. (Please tick)

Mostly A's ☐

Mostly B's ☐

Mostly C's ☐

Mostly D's ☐

2. On the following scale please indicate how motivated you are to continue with your study or seek higher qualifications. (Please tick)

Highly motivated ☐

Somewhat motivated ☐

Neutral ☐

Not motivated ☐

Feedback request tick-box

If you would like the researcher to mail you a summary of the results of this study then please indicate by ticking the box below. Please note that the summary that you will receive will be an overall group summary, and no individuals will be identifiable from it.

Questionnaire code number:_____

Appendix 6: Grade Access Form

GRADE ACCESS FORM

IMPORTANT PLEASE READ:
I have read the information sheet and signed the release form (overleaf) and by disclosing my student identification number I agree to an administrative member of the School of Psychology accessing my Massey University academic record.

I do this on the understanding that my personal records will remain strictly confidential and my identity will remain anonymous to the researcher (Simon Bennett) and to his supervisors (Dr Ross Flett and Mr Paul Hirini).

I understand that the researcher (Simon Bennett) will be supplied with my grades linked to the questionnaire code number written on this sheet.

I understand that both Simon and his supervisors are unable to personally access the student records database and therefore have no way of linking my grades with my student ID number or my name.

I understand that once my grades and my questionnaire code number are supplied to the researcher, that this sheet will be destroyed.

Massey University Identification number: _____

N.B. Please complete the grade access form and return along with the release form in the envelope addressed to: Robyn Knuth, Cultural Identity and Academic Achievement Study, School of Psychology, Private Bag 11 222, Palmerston North.

Questionnaire code number_____

Appendix 7: Means and Standard Deviations for Item Responses of All Participants to the Problem Scale

PROBLEM	Mean	S.D.
Ability of lecturers to present information.	2.97	1.10
Ability of tutors to present information.	2.75	1.10
Achieving good results.	3.21	1.09
Adjusting to study after years in the workforce.	3.31	1.46
Adjusting to the style of teaching and learning at this university.	3.57	1.10
Balancing the demands of work and study.	3.82	1.19
Feeling to shy to contact lecturers.	3.32	1.37
Conflict with people I live with.	2.67	1.23
Feeling dependent on parents/family.	2.42	1.07
Financial conflicts with family/partner.	2.81	1.31
Homesickness.	2.76	1.19
Learning the academic language.	3.72	1.18
Living up to others expectations.	3.14	1.14
Having no one to discuss my problems with.	2.86	1.09
Paying back my student loan.	3.51	1.42
Prejudice/Racism.	3.00	1.11
Pressure from parents regarding finances.	2.25	1.11
The culture shock of the university lifestyle.	3.03	1.30
University study feels very impersonal.	3.26	1.05
Balancing study with family commitments.	3.89	1.07
Understanding what is required to do well on assignments.	3.58	0.98
Understanding how to access academic support.	3.26	1.17
Getting behind with course work.	3.71	0.96
Making myself understood.	3.25	1.03

Appendix 8: Means and Standard Deviations for Item Responses of All Participants to the Problem Scale Separated by Gender.

PROBLEM	Male		Female	
	Mean	S.D.	Mean	S.D.
Ability of lecturers to present information.	2.89	1.15	3.00	1.09
Ability of tutors to present information.	2.95	1.12	2.68	1.09
Achieving good results.	3.05	1.22	3.26	1.04
Adjusting to study after years in the workforce.	2.68	1.60	3.53	1.35
Adjusting to the style of teaching and learning at this university.	3.26	1.19	3.68	1.05
Balancing the demands of work and study.	3.26	1.37	4.02	1.07
Feeling to shy to contact lecturers.	3.37	1.46	3.30	1.35
Conflict with people I live with.	2.68	1.24	2.66	1.24
Feeling dependent on parents/family.	2.58	1.07	2.36	1.08
Financial conflicts with family/partner.	2.32	1.41	2.98	1.23
Homesickness.	2.63	1.34	2.81	1.16
Learning the academic language.	3.26	1.36	3.89	1.07
Living up to others expectations.	2.84	1.01	3.25	1.18
Having no one to discuss my problems with.	2.79	1.18	2.89	1.07
Paying back my student loan.	3.16	1.46	3.64	1.40
Prejudice/Racism.	2.53	1.07	3.17	1.09
Pressure from parents regarding finances.	1.89	0.94	2.38	1.15
The culture shock of the university lifestyle.	2.84	1.30	3.09	1.30
University study feels very impersonal.	3.16	1.16	3.30	1.01
Balancing study with family commitments.	3.32	1.29	4.09	0.90
Understanding what is required to do well on assignments.	3.36	1.12	3.66	0.92
Understanding how to access academic support.	2.95	1.31	3.38	1.11
Getting behind with course work.	3.68	0,95	3.72	0.97
Making myself understood.	2.89	1.20	3.38	0.95

Appendix 9: Means and Standard Deviations for Item Responses of All Participants to the Problem Scale Separated by Age Group.

PROBLEM	Under 30		30 and over	
	Mean	S.D.	Mean	S.D.
Ability of lecturers to present information.	3.17	0.98	2.78	1.18
Ability of tutors to present information.	2.83	1.01	2.68	1.18
Achieving good results.	3.20	1.11	3.21	1.08
Adjusting to study after years in the workforce.	2.54	1.44	4.02	1.07
Adjusting to the style of teaching and learning at this university.	3.14	0.97	3.97	1.07
Balancing the demands of work and study.	3.40	1.26	4.22	0.98
Feeling to shy to contact lecturers.	3.31	1.30	3.32	1.45
Conflict with people I live with.	2.77	1.17	2.57	1.30
Feeling dependent on parents/family.	2.74	0.98	2.11	1.07
Financial conflicts with family/partner.	2.77	1.21	2.84	1.40
Homesickness.	2.94	1.16	2.59	1.21
Learning the academic language.	3.37	1.09	4.05	1.18
Living up to others expectations.	3.57	0.85	2.73	1.24
Having no one to discuss my problems with.	3.02	0.98	2.70	1.18
Paying back my student loan.	3.62	1.37	3.41	1.48
Prejudice/Racism.	2.97	0.95	3.02	1.26
Pressure from parents regarding finances.	2.40	0.91	2.11	1.26
The culture shock of the university lifestyle.	2.89	1.30	3.16	1.30
University study feels very impersonal.	3.49	0.95	3.05	1.10
Balancing study with family commitments.	3.31	1.02	4.43	0.80
Understanding what is required to do well on assignments.	3.40	0.98	3.76	0.95
Understanding how to access academic support.	3.37	1.09	3.16	1.26
Getting behind with course work.	3.77	0.77	3.65	1.11
Making myself understood.	3.31	0.99	3.19	1.08