

Influential Factors Moderating Academic Enjoyment/Motivation and Psychological Well-being for Maori University Students at Massey University

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Perceptions of stress and discomfort in the university environment and the relation between these perceptions and academic enjoyment/motivation and psychological well-being were examined in a sample of 122 Maori psychology students at Massey University. The moderating effects of perceived control and cultural identity were also considered. Major findings were that: (a) individuals reporting high stress, more feelings of discomfort at university, and a lower sense of academic control, were significantly more likely to be experiencing a lowered sense of well-being, and reduced feelings of academic enjoyment and motivation; (b) under conditions where there is a high sense of academic control, those with a high sense of comfort with university report significantly higher well-being than those with low comfort; (c) there were no moderating effects of cultural identity. Providing a comfortable academic environment that students perceive as culturally-congruent increases perceived psychological well-being and academic enjoyment and motivation.

Education will "...provide people with the skills and knowledge that enable them to lead fulfilling lives and to contribute to building the nation's wealth and communities, ...supporting and enhancing New Zealand's unique identity, culture and values..." (Ministry of Education, 2001, p.1). In 1993, there were 18,527 Maori students enrolled in tertiary education. By 1999, the number of Maori enrolled had increased to 27,837. This rate of growth (150 per cent) is six times that of Pakeha/European students (Ministry of Education, 2001b). Nevertheless, whilst initial participation (as measured by enrolments) is increasing, poor retention rates for Maori in mainstream tertiary institutions (Coombes, 2003) remains an issue of concern.

In 2000, only 45 per cent of all Maori tertiary enrolments were in a degree-level or higher course, compared with

59 per cent of non-Maori enrolments (Ministry of Education, 2001b). A recent study looked at full-year, first-time degree students in 1997, and again in 1999. The study found that only 58 per cent of Maori students were still enrolled at the same institution in 1999, compared with 75 per cent of non-Maori students (Ministry of Education, 2001a). The information available does raise concerns about the number of Maori students who do not complete their course of study. From a pragmatic viewpoint, an investigation into some of the factors that influence continued Maori student participation seems timely and appropriate.

An analysis of factors that affect Maori students' academic performance (and more global psychological well-being) are important to consider, especially in relation to recruitment and retention of Maori students. Bennett and

Flett (2001) demonstrated that cultural identity can moderate the relationship between study-related problems and academic achievement in a sample of Maori students at Massey University. The importance of cultural identity as an empowering resource has been emphasised both in local contexts (e.g. Durie, 1998, 2001; Hirini & Flett, 1999) and in overseas research with indigenous populations (e.g. Byron, 1997; Romero, 1998).

A student's perceived academic control is another influential factor that may affect academic performance and psychological well-being. Perry, Hladkyj, Pekrun and Pelletier (2001) noted that high academic control was related to a range of positive outcomes in a sample of US students. Other research has suggested that a sense of comfort with the university environment (e.g. Gloria & Robinson Kurpius, 2001) is associated with positive university experiences in a group of Native American students. Again, further analysis of the relationship between these variables for Maori students seems warranted.

Following on from the work of Bennett and Flett (2001), Perry et al., (2001) and Gloria and Robinson Kurpius (2001), the specific aims of the study reported here were to:

(1) assess the moderating effects that cultural identity and perceived academic control has on the relationship between general stress experienced by Maori students in the university environment, and their academic enjoyment/motivation

and psychological well-being, and;

(2) assess the moderating effects that cultural identity and perceived academic control potentially has on the relationship between specific discomfort experienced by Maori students' in the university environment, and their academic enjoyment/motivation and psychological well-being.

The specific hypotheses were as follows:

1. There will be a significant main effect of perceived stress, discomfort in the university environment, cultural identity, and academic control on outcomes.
2. There will be a significant interaction of perceived stress and discomfort in the university environment with cultural identity and academic control.

These hypotheses are represented in Figure 1. The hypotheses will be tested with a series of hierarchical multiple regression analyses.

Method

Participants

A request was made to the School administrator for a list of names and addresses of psychology students who identified as Maori on the academic register. There was a precedent in the School of Psychology and many other Schools in the university to use this type of enrolment information as a vehicle for contacting Maori students. It is important the Maori students are made aware of resources and support available within the School, as well as scheduled events (e.g. various hui).

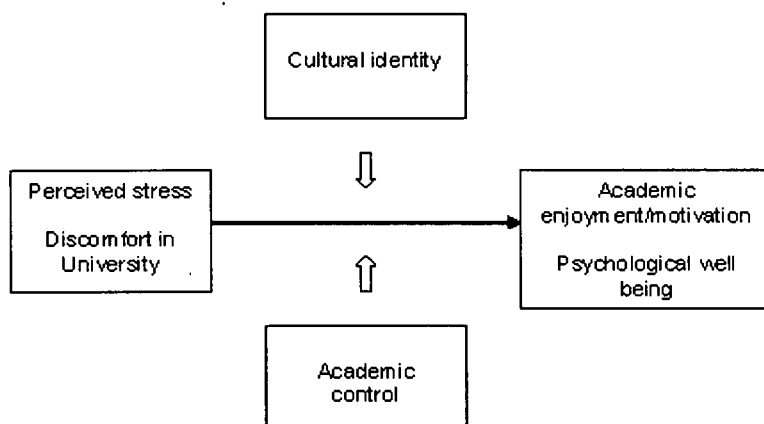
Three hundred and fifteen (315) students were sent a letter, the information sheet and questionnaire. One hundred and twenty two (122) students returned the completed questionnaire representing an overall response rate of 38.7 %.

Materials

The questionnaire consisted of the following scales:

(1) **Stress:** "For many university students stress is a facet of everyday life" (Towers, 2000, p. 27). Towers conducted an extensive literature review on varying types of stress as it specifically related to student procrastination. As part of his research involved the measurement of stress, he utilised the Cohen, Kamarck

Figure 1. Schematic representation of hypotheses.



and Mermelstein (1983) Perceived Stress Scale (PPS) to assess perceived stress among students. The same scale, more specifically the 10-item version was used to measure the students perceived stress, given the superior psychometric properties inherent in the scale (Monroe & Kelley, 1995, cited in Towers, 2000). Typical scale items (e.g. "How often have you felt difficulties were piling up so high that you could not overcome them?": "How often have you felt nervous and stressed?") were rated on a five step scale (0 = never, to 5 = very often). A total stress score was calculated as a sum across the ten items.

(2) **Comfort in the university environment:** This was measured by perceptions of the university environment (Gloria and Robinson Kurpius, 2001). Respondents were asked to rate how true each item was for them. Typical scale items (e.g. "Staff have been available for help outside of class", "The university seems like a cold, uncaring place to me") were rated on a seven step scale (1 = not at all, to 7 = very true). A total comfort score was calculated as a sum across the 12 items.

(3) **Academic control:** The Perceived Academic Control measure has been described in Perry et al. (2001). Respondents were asked to think about the level of control they have over determining their academic outcomes. For each item the respondents were asked to rate how accurately it represented their opinion about how well they do at university. Typical scale items (e.g. "I have a great deal of control over my academic performance in my psychology course", "No matter what I do, I can't seem to do well in my courses") were

rated on a four step scale (1 = strongly disagree, to 4 = strongly agree). A total control score was calculated as a sum across the 8 items.

(4) **Subjective well-being:** This was measured by the 10 item-short form of Affectometer 2 (Kammann and Flett, 1983). This measure of affective well-being has been extensively validated (Diener, 1984; Flett, 1986). Respondents were asked to rate how often they had experienced specific feeling over the last month. Typical scale items (e.g. "My life is on the right track", "I can't be bothered doing anything") were rated on a five step frequency scale (0 = not at all, to 5 = all the time). Negative affect items were recoded before a total well-being score was calculated as a sum across the 10 items.

(5) **Academic enjoyment/motivation:** The measure for academic enjoyment/motivation decisions were based on the criteria used by Gloria and Robinson Kurpius (2001) in their study on the academic non-persistence decisions of Native American students. Respondents were asked to think about their experiences at Massey University that contributed to their ongoing enjoyment and determination to study at university. Typical scale items (e.g. "It has been difficult for me to meet and make friends with other students", "My academic experience has had a positive influence on my intellectual growth and interest in ideas") were rated on a five step agreement scale (1 = strongly disagree, to 5 = strongly agree). Negatively worded items were recoded before a total academic enjoyment/motivation score was calculated as a sum across the 16 items.

(6) **Cultural Identity:** This was measured by the "Cultural Indicators" questionnaire as reported by Te Hoe Nuku Roa Research Team (1999) 'Maori Profiles Research Project.' Typical questions centred around knowledge of whakapapa, tikanga, te reo Maori, whenua and whanaungatanga. Cultural identity was scored in terms of the level of detailed knowledge and exposure to these aspects of te ao Maori. The assumption was that a higher level of exposure to such things represented a more elaborated sense of cultural identity.

Procedure

The study was conducted with university students who self identified as Maori that study psychology (extramurally or internally) at Massey University (Albany, Palmerston North and Wellington). The researchers contacted the students' by way of a letter.

Accompanying the letter was an Information Sheet that outlined the broad aims of the research. The researchers envisaged a shared understanding with the participants at the conclusion of reading the material (consultation). Concluding the reading the participants had a clear understanding of who was doing the research; what the research was about; what they were asked to do; what their rights as a participant were; what they could expect from the researchers; how they could contact the researchers and ask questions; and how they could receive feedback and results about the study.

The research questionnaire was attached to the Information Sheet. All measures included in the questionnaire had an established research history and documented reliability and validity.

All guidelines of the New Zealand Psychological Society were observed. The questionnaire and the associated protocol were subjected to a process of ethical peer review.

Results

Descriptive Statistics

The sample consisted of 19 males and 103 females. The mean age was 32.8 years ($SD = 9.6$) with an age range of 17 to 59 years. Forty nine percent of the sample were full-time students, 64% intended to major in psychology, and 59% had dependent children or relatives. The average number of years enrolled at university was $M = 2.4$, $SD = 2.2$. There were no significant relationships between these sample characteristics and the study variables reported later in these results.

Table 1 reports the means, standard deviations, scale reliabilities and intercorrelations for the study variables. The reliabilities for the composite scale scores were acceptable by standard psychometric criteria. The general picture that emerged from the correlational analysis suggests that individuals reporting high stress, more feelings of discomfort at university, and a lower sense of academic control, were significantly more likely to be experiencing a lowered sense of well-being, and reduced feelings of academic enjoyment and motivation.

Main Analyses

The major hypotheses were:

- (1) That a sense of academic control interacts with perceived stress, and with perceived discomfort in the university environment, to predict outcomes (psychological well-being, and academic enjoyment/motivation). That is, we expected higher levels of stress and discomfort would be associated with increases in negative outcomes among respondents with a low sense of academic control; among respondents with a high sense of control, stress and discomfort was predicted to have less negative impact on outcomes.
- (2) That a high level of exposure to things Maori (a proxy measure of cultural identity) interacts with perceived stress, and with perceived discomfort in the university environment, to predict outcomes (psychological well-being, and academic enjoyment/motivation). That is, we expected higher levels of stress and discomfort would be associated with increases in negative outcomes among respondents with a lower level of Maori cultural identity; among respondents with a higher level of Maori cultural identity, stress and discomfort was predicted to have less negative impact on outcomes.

To test the first hypothesis two sets of hierarchical multiple regression analyses were conducted with academic enjoyment/ motivation, and psychological well-being respectively as the dependent variables. The main effects of stress, discomfort and academic control are entered on step 1 of the analysis. Vectors formed by calculating the cross product term of academic control x stress, and academic control x discomfort were then added at step two (Baron & Kenny, 1986). In this way the variance accounted for by the interaction term was assessed after controlling for the main effects. The results of these analyses are reported in Tables 2 and 3.

Prior to analysis, the variables were screened for assumptions of statistical analysis. Following the suggestion of Tabachnik and Fidell (2001) that conventional but conservative alpha levels (e.g. $p < .001$) be used to evaluate the significance of skewness and kurtosis, the study variables were found

Table 1. Means, Standard Deviations, Bivariate Correlations and Scale Reliabilities

Study variables	M	SD	1	2	3	4	5	6
1. Stress	1.78	.67	(.89)					
2. Comfort in the University environment	62.85	12.05	-.31**	(.83)				
3. Academic control	26.57	3.46	-.31**	.50**	(.78)			
4. Subjective well-being	1.68	1.03	-.61**	.34**	.27**	(.81)		
5. Academic enjoyment/motivation	58.23	8.26	-.29**	.63**	.49**	.32**	(.83)	
6. Cultural identity	5.6	2.83	.12	-.13	-.06	.08	.06	--

Note. * $p < .05$, ** $p < .01$. Reliabilities (Cronbach's alpha) are reported in brackets on the diagonal of the correlation matrix

Table 2. Hierarchical Multiple Regression Analysis of Stress, Discomfort at University, and Sense of Academic Control on Psychological Well-being Showing Standardised Regression Coefficients, R , R^2 , adjusted R^2 , and R^2_{change} , for all Respondents (available $N=79$)

Predictor	Step 1	Step 2
Discomfort at university	.12	.19
Total stress	-.58**	-.53**
Sense of academic control	.04	.15
Discomfort x control		.23*
Stress x control		-.08
R	.65**	.70**
R^2	.43	.49
Adjusted R^2	.41	.46
R^2_{change}		.06*

Note: * $p < .05$ ** $p < .01$

Table 3. Hierarchical Multiple Regression Analysis of Stress, Discomfort at University, and Sense of Academic Control on Academic Enjoyment/Motivation Showing Standardised Regression Coefficients, R , R^2 , adjusted R^2 , and R^2_{change} , for all Respondents (available $N=79$)

Predictor	Step 1	Step 2
Discomfort at university	.48**	.46**
Total stress	-.16	-.15
Sense of academic control	.20 ^a	.23*
Discomfort x control		-.04
Stress x control		-.11
R	.67**	.68**
R^2	.46	.47
Adjusted R^2	.44	.43
R^2_{change}		.01

Note: * $p < .05$ ** $p < .01$ ^a $p = .050$

Table 4. Hierarchical Multiple Regression Analysis of Stress, Discomfort at University, and Cultural Identity on Academic Enjoyment/Motivation Showing Standardised Regression Coefficients, R , R^2 , adjusted R^2 , and R^2_{change} , for all Respondents (available $N=79$)

Predictor	Step 1	Step 2
Discomfort at university	.57**	.55**
Total stress	-.21*	-.20*
Cultural identity	.10	.11
Discomfort x identity		.12
Stress x identity		.10
R	.67**	.68**
R^2	.44	.46
Adjusted R^2	.42	.42
R^2_{change}		.01

Note: * $p < .05$ ** $p < .01$

Table 5. Hierarchical Multiple Regression Analysis of Stress, Discomfort at University, and Cultural Identity on Psychological Well-being Showing Standardised Regression Coefficients, R , R^2 , adjusted R^2 , and R^2_{change} , for all Respondents (available $N=79$)

Predictor	Step 1	Step 2
Discomfort at university	.14	.15
Total stress	-.61**	-.62*
Cultural identity	.08	.07
Discomfort x identity		-.14
Stress x identity		-.23*
R	.66**	.69**
R^2	.44	.48
Adjusted R^2	.42	.45
R^2_{change}		.04

Note: * $p < .05$ ** $p < .01$

to be normally distributed. There were no univariate outliers and no cases were identified through Mahalanobis distance as being multivariate outliers with $p < .001$.

As indicated in Table 2, the R for regression was significantly different from zero with the addition of the main effects. Total stress contributed significantly to prediction of well-being and altogether 43% (41% adjusted) of the variability in well-being was accounted for by knowing scores on these variables. At step two, the addition of the interaction terms to the equation resulted in a significant

increment in R^2 . The Discomfort at University x Sense of Academic Control interaction emerged as significant and a schematic representation of this interaction is presented in Figure 2. The data were derived by conducting a median split on the discomfort and sense of control measures. This classification was done only for purposes of illustration and the variables were treated as continuous in all statistical analyses. Figure 2 illustrates that under conditions where there is a low sense of academic control, individuals who report feeling more comfortable in the university environment tend to

report slightly higher well-being than those less comfortable with university. Conversely, under conditions where there is a high sense of academic control, those with a high sense of comfort with university report significantly higher well-being than those with low comfort.

Table 3 shows significant main effects for feelings of discomfort and a sense of control in the prediction of scores on the academic enjoyment/motivation scale with 46% (44% adjusted) of the variability in the dependent variable accounted for by scores on these variables. There were

no significant interaction effects and it should be noted that the sense of control variable shows a suppression effect (i.e. became more significant on step 2 of the analysis) which makes interpretation somewhat more ambiguous (Smith, Ager & Williams, 1992)

To test the second hypothesis another set of hierarchical multiple regression analyses were conducted with the same dependent variables and considering the moderating effects of cultural identity. These results are reported in Tables 4 and 5.

Table 4 shows significant main effects for feelings of discomfort and stress in the prediction of scores on the academic enjoyment/motivation scale with 44% (42% adjusted) of the variability in the dependent variable accounted for by scores on these variables. There were no significant interaction effects. Table 5 shows a significant main effect for stress in the prediction of psychological well-being scores. Step 2 of the analysis suggests a significant Stress x Cultural Identity interaction. However the addition of the interaction terms to the equation resulted in a non-significant increment in R^2 and thus the significant interaction terms was not analysed further.

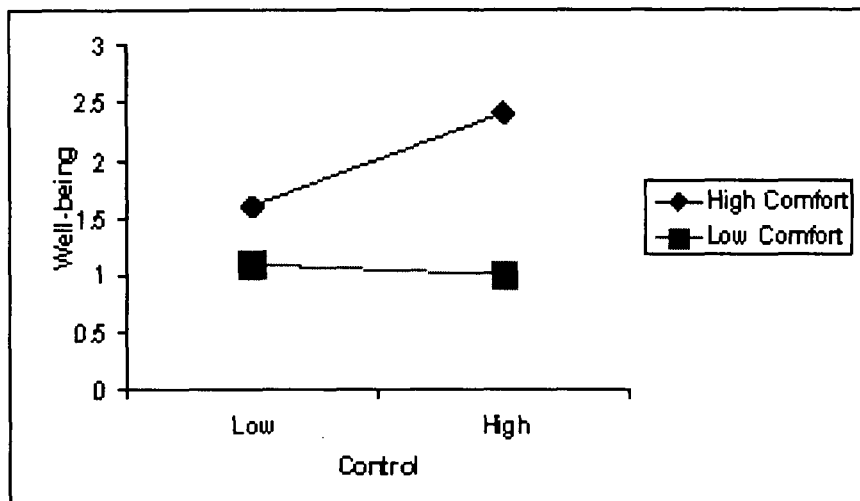
Discussion

The results suggests that individuals reporting high stress, more feelings of discomfort at university, and a lower sense of academic control, were significantly more likely to be experiencing a lowered sense of well-being, and reduced feelings of academic enjoyment and motivation.

Under conditions where there is a low sense of academic control, individuals who report feeling more comfortable in the university environment tend to report slightly higher levels of well-being than those less comfortable with university. Conversely, under conditions where there is a high sense of academic control, those with a high sense of comfort with university report significantly higher well-being than those with low comfort.

There were no significant interaction effects of cultural identity on perceived stress, and perceived discomfort in the university on outcomes (psychological

Figure 2. Schematic representation of the interaction of discomfort at university, sense of academic control and well-being.



well-being and academic enjoyment/motivation.

The small sample size raises issues of statistical power and requires that caution be exercised in the interpretation of the regression analyses and the simple interaction effect (Rosnow & Rosenthal, 1989a, 1989b). The small number of men in the sample meant that a detailed comparison of gender differences was not possible. The nature of the sample (a convenience sample of just psychology students) meant that attempts at generalisation were not appropriate.

Despite these limitations, a number of inferences are nevertheless possible. The findings do raise some important issues influencing academic enjoyment/motivation and well-being facing Maori psychology students in this sample.

Clearly stress is a strong predictor of well-being. This is not a new phenomenon; however the results clearly demonstrate the importance of incorporating an initiative within the university or School of Psychology that helps to promote this understanding, and looking at ways of preventing students from becoming overwhelmed by stress. A stress management programme tailored for Maori students is an important initiative the School can investigate.

Comfort at university was a consistent predictor of academic enjoyment/motivation for Maori students at Massey University, concurring with the findings of Gloria and Robinson Kurpius (2001). Social

support was the strongest predictor of academic persistence of Native American students followed by comfort in the university in the research conducted by Gloria and Robinson Kurpius (2001). The essential specifics identified within the construct of social support were: (1) having a good relationship (informal and formal) with at least one faculty/staff member; and (2) family support. The essential component of students' perceived comfort in the university is when they perceive a greater fit between themselves and the university culture (Gloria and Robinson Kurpius, 2001, p.97), reflecting greater academic enjoyment/motivation. Sanders (1987, cited in Gloria and Robinson Kurpius, 2001) refers to this as 'cultural congruence.'

Creating a culturally congruent environment for Maori students is an important consideration for the University, more specifically the School of Psychology. Some members of the School currently fill a mentoring role for Maori students who are Te Rau Puawai (TRP) bursars, and anecdotal reports indicate that the TRP bursars historically have done well in psychology. Implementing a similar programme for all Maori students in the psychology department needs to be encouraged. Staff on the Bicultural Committee can begin to implement this strategy for future intakes of internal students. The School also has a tangata whenua resource room (recently named by the School kaumatua Mr Turoa Haronga as *Tuia te Mana Maori*),

where weekly tutorials are run to help assist Maori students, in addition to regular tutorial times. This environment helps to support the students in a whanau atmosphere, where everyone works, eats and struggles together. Occasionally, Bicultural Committee members drop in to informally converse with students, to share a meal or simply talk about the rugby in the weekend or such. In these ways social support is generated by attempting to reduce any perceived distance between staff and students. These informal interactive practices align closely to the research findings by Gloria and Robinson Kurpius (2001) that clearly they have value for promoting academic persistence (academic enjoyment/motivation). The value and validity of these practices needs to be acknowledged, and more importantly continued and refined.

Cultural identity was not a significant predictor or moderator of academic enjoyment/motivation and well-being. This may be a function of the differences in the conceptualisation and measurement of cultural identity. Bennett and Flett (2001) showed that cultural identity moderates the relationship between study related problems and academic achievement in a sample of Maori students, emphasising the important role that cultural identity has in increasing a student's resilience to the difficulties of academic life. These findings have implications for the identification and development of factors essential in strengthening cultural identity for Maori students in the university. Further work needs to be carried out in relationship to the ongoing conceptualisation and critique of appropriate measurement tools to identify specific components of a diverse Maori reality, in other words, a Maori cultural identity.

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