

The Failure of General Self-Esteem: Self-Esteem's Aggravating Affect on Racial
Discrimination's Relation to Achievement

Gawaian H. Bodkin-Andrews, Genevieve F. Nelson, Rhonda G. Craven, Alexander S. Yeung
& Katrina A. Newey

Centre for Educational Research, University of Western Sydney

Abstract

Psychological research and popular culture have repeatedly noted that general self-esteem is a positive contributor to well-being and performance indicators across a large variety of domains including education. However, whilst increased self-esteem may have a positive influence on educational outcomes, increasing evidence suggests that perceptions of racial discrimination may also have a negative impact on these outcomes. The current investigation used a variety of structural equation modelling techniques to examine the potential impact of Indigenous Australian students' general self-esteem and perceptions of racial discrimination upon performance on standardised spelling and math achievement measures. The results indicated that general self-esteem did not impact on Indigenous students' performance, however, perceived racial discrimination impacted significantly and negatively on performance. In addition, a moderating analysis demonstrated that Indigenous students with a higher general self-esteem were more susceptible to the negative impact of racial discrimination than those with low self-esteem.

Paper presented at the Australian Association for Research in Education, Brisbane, November 2008. Correspondence concerning this paper should be sent to Gawaian Bodkin-Andrews, Centre for Educational Research, Bankstown Campus, University of Western Sydney, Locked Bag 1797, Penrith South DC, NSW 1797, Australia or via email to g.bodkinandrews@uws.edu.au

It has been noted by a number of prominent self-construct researchers that following the dominance of the behaviourist movement spanning across the early to mid 1900s, psychology's emphasis towards the importance of individuals' self-perceptions became grossly neglected in favour of a strictly environmental, or in some cases genetic approach (Harter, 1990; Marsh, Byrne, & Shavelson, 1992; Shavelson, Hubner, & Stanton, 1976). Although the validity of the stereotypical anti-self perspective held by chief theorists within the behaviourist movement can be questioned (Hattie, 1992), a more recent revival in self-referent research, beginning largely in the 1970's, cannot be denied. This re-emergence of self-perceptions into psychological research has also seen an explosion in theoretical perspectives, and a confusing array of interrelated (and at times conceptually indistinguishable) labels such as *self-image*, *self-worth*, *self-efficacy*, *self-respect*, *self-concept*, and *self-esteem* to name a few (Hattie, 1992). For the purposes of this investigation, an emphasis will be placed on the label of general self-esteem and research addressing the effectiveness of this self-construct.

Whereas self-esteem has been suggested to positively impact upon educational outcomes for both Indigenous (Lester, 2000; New South Wales Aboriginal Education Consultative Group [NSWAECG] & New South Wales Department of Education and Training [NSWDET], 2005; Swan & Raphael, 1995) and non-Indigenous students (e.g., Alve-Martens, Peixoto, Gouveia-Perira, Amaral & Pedro, 2002; Swann, Change-Schneider & McClarty, 2007; Zimmerman, Copeland, Shope & Dielman, 1997), increasing evidence suggests that racial discrimination may impact upon similar outcomes in a negative manner (Bodkin-Andrews, 2008; Rahman, 2003; Verkuyten & Brug, 2003; Verkuyten & Thijs, 2002; Wong et al., 2003). As a result of these findings and suggestions that self-esteem may be an essential ingredient for increased levels of resiliency (Branden, 1994), this investigation attempted to examine the differential impact of self-esteem and racial discrimination may have on Indigenous Australian secondary students' spelling and math achievement scores.

Self-esteem and Achievement of Indigenous Australian Students

In recent years, self-esteem has become a hot-topic, not only within psychological research, but also within the disciplines of business, education, politics, and religion (Brown, 1993), and has been deemed a pivotal construct of attaining success. In exploring the need for a heightened self-esteem within any individual, Branden (1994) argues that:

To say that self-esteem is a basic human need is to say that it makes an essential contribution to the life process... Positive self-esteem operates, in effect, as the immune system of consciousness, providing resistance, strength and capacity for regeneration (p. 1).

As a result of this need, Branden (1994) defines self-esteem as a construct that allows individuals to cope with the basic challenges of life, in addition to feeling deserving of happiness. Indeed, some research does suggest that self-esteem does is a pivotal construct for success (Zimmerman, et al., 1997), and as a result, may also be seen as a useful intervention for individuals whose background may traditionally be associated with lowered levels of achievement or success in certain areas.

Specifically, within the Australian education system, Indigenous Australian students have often been associated with lowered educational standards and outcomes (Bortelli & Cresswell, 2004; Craven & Bodkin-Andrews, 2006; Purdie, Tripcony, Boulton-Lewis, Fanshawe, & Gunstone, 2000). Even the most cursory examination of the Indigenous educational literature, highlights that despite substantial improvement over the last few decades, the disadvantaged status of Indigenous Australian students, ranging from pre-school to the higher education system, is still clearly evident (Australian Bureau of Statistics [ABS],

2006; Bortelli & Cresswell, 2004; Department of Education Science and Training [DEST], 2002, 2003, 2005).

One phase of schooling, in which the disparities between the performance of Indigenous and non-Indigenous students is arguably most evident, is within the secondary schooling system. In examining achievement patterns obtained from the large-scale Program for International Student Assessment survey (PISA, Bortelli & Cresswell, 2004), disparities in achievement levels for 15 year-old Indigenous Australians were evident when compared to all student groups of the same age. It was found that the percentage of Indigenous students who achieved the benchmark average for literacy, mathematics, and science was considerably lower than for the total Australian sample. That is, only 30.7% of Indigenous students reached the benchmark for reading literacy when compared to 61.8 % of all students within Australia. Similar results were achieved for mathematics (26.2% compared to 65.4%) and science (29.1% compared to 61.8%). In addition, research conducted by DEST (2005) has found that there is over a 20% inequity in the transition from compulsory secondary schooling (Grade 10 and below) into non-compulsory schooling (Grade 11 and 12). That is, only 66.3% of Indigenous students reach Year 12 when compared to 86.3% of the non-Indigenous students. With a complete and successful progression through secondary schooling being recognised as one of the most important determinants in opening a variety of positive future pathways, such as better employment opportunities, higher educational options, and later economic stability (Craven & Marsh, 2004; DEST, 2005; Lester, 2000), disparities between Indigenous and non-Indigenous secondary school achievement must not be ignored.

New Solutions for Indigenous Education

Recent Indigenous education research has begun to take a new direction in attempting to more accurately identify educational determinants that have traditionally escaped the limited focus of the descriptive and statistical quagmire of educational inequities (Bin-Sallik, 2005; Bin-Sallik, Blomeley, Flowers, & Hughes, 1994). This new focus has largely centred around a stronger focus on the psychological well-being of Indigenous students (e.g., Craven & Marsh, 2004). One psychological variable that has received some consideration is that of general self-esteem. For example, within *The Ways Forward Report* on Indigenous mental health, Swan and Raphael (1995) argue that a key factor in aiding self-determination for Indigenous peoples would be the promotion of a stronger sense of self amongst the younger generations. Supporting Swan and Raphael's suggestions, *The Report of the Review of Aboriginal Education* (NSW AECG Inc and NSW DET, 2004,) also highlighted the need to bolster the self-esteem of Indigenous students by stating that:

A recurring theme from the field trips indicated that the success of Aboriginal students in junior secondary school, as in other phases of schooling, will only improve if schools can support and strengthen the self-esteem of their students (p. 110).

In addition to this, Craven and Tucker (2003), who conducted semi-structured focus group discussions with representatives from a number of regional NSW Aboriginal Education Consultative Groups (AECG), identified an overwhelming theme of the need to address the issue of the enhancement of Indigenous students' self-concepts and self-esteem as a method of obtaining stronger schooling and post-schooling outcomes.

The question still remains that despite the recommendations of respected Indigenous community members and researchers, just how effective is self-esteem as a potential facilitator of academic performance? Research examining this issue is inconsistent, for as Hattie (1992) found that within his review of over 120 studies (primarily from USA data), the majority of studies reported small correlations between .0 and .3 with an average correlation

of .21. Within the Australian setting, a number of studies have attempted to theoretically elucidate the role of self-esteem for Indigenous Australians within the educational system (e.g., Lester, 2000; Martin, 2006; Swan & Raphael, 1995), and/or attempted to more directly address this issue utilising varying quantitative and qualitative research methodologies (e.g., Bodkin-Andrews, Craven, & Marsh, 2005; Bodkin-Andrews, 2008; Craven & Marsh, 2004; Craven & Tucker, 2003; Pedersen & Walker, 2000; Purdie & Mcrindle, 2004; Zubrick et al., 2006). Of these publications, it is important to note that of the quantitative studies examining objective educational outcomes (e.g., standardised achievement, student grades, and teachers' ratings of students); none reported significant relations between general measures of self-esteem and academic achievement and success (Bodkin-Andrews, 2008; Pedersen & Walker, 2000; Purdie, 2003; Purdie & Mcrindle, 2004; Zubrick et al., 2006). However, this does not mean that self-esteem is an irrelevant construct either academically or otherwise. As reported by Bodkin-Andrews et al. (2005), general self-esteem shared significant correlations with more subjective variables such as school enjoyment and school aspirations for Indigenous students. Additionally, outside the academic sphere, Zubrick et al., (2005) found self-esteem to be a significant protective factor with regard to Indigenous youth mental health, including being negatively associated with suicidal thoughts, and holding strong positive relations with increased physical exercise and more positive parental relations. These results led Zubrick et al. to conclude that for Indigenous adolescents:

Good self-esteem is an important protective factor for emotional and behavioural wellbeing, as well as being associated with healthier lifestyle choices, such as not smoking... The findings... suggest two possible ways of improving and maintaining levels of self-esteem in young people - parenting programmes aimed at reducing the incidence of poor parenting styles, and encouraging exercise and participation in organised sport. These may well be expected to have flow on effects on emotional and behavioural wellbeing as well as suicidal thoughts and suicidal attempts (p.360-361).

Discrimination and the Self

Within the international literature, studies attempting to identify significant relations between discrimination and self-esteem have been inconsistent. For example, Barry and Grilo (2003) found that for East-Asian immigrants to the United States, the Rosenberg Self-Esteem Scale had small but significantly positive relations with perceptions of discrimination experienced. Conversely, research by Verkuyten and Thijs (2004) found that for Turkish students within the Netherlands, perceived discrimination shared not only a small but significantly negative relation with general self-esteem, but also interacted with the relation between academic self-esteem and general self-esteem scores. Specifically, it was found that for participants experiencing higher levels of discrimination, there was no relation between general self-esteem and academic self-esteem, yet for those who experienced little discrimination, a significantly positive relation was evident. From these results, it could be argued that higher levels of perceived discrimination may weaken the importance of education (or confidence there in) with regard to one's overall self-esteem. As a result, Verkuyten and Thijs argued that these results provided evidence for psychological disidentification "whereby one's global self-worth is less based on perceived performances and competencies in the academic domain" (p. 120).

In a differing approach to examining the relations between self-esteem and discrimination, Corning (2002) utilised a sample of female undergraduate students in the USA and found that general self-esteem moderated the relation between perceived sexual discrimination and depression. That is, there was no significant relation found between

perceived discrimination and depression, when self-esteem was used as a moderator, participants with a higher self-esteem reported lower relations between discrimination and depression when compared to participants with a lower self-esteem. This led Corning to conclude that self-esteem may act as a significant buffer against increased levels of depression, especially with regard to experiences of sexual discrimination.

Within the field of Indigenous education, studies examining the impact of discrimination or racism upon educational outcomes and/or self-esteem for Indigenous students are somewhat limited. Indeed, as tentatively suggested by the research of Corning (2002), it is possible that a heightened general self-esteem may hold buffering properties against the negative effects of discrimination across varying minority or disadvantaged groups. In consideration of this possibility, this study shall seek to clarify the potential independent impact of varying forms of racial discrimination (namely personal/group discrimination [see Taylor, Wright, Moghaddam, & Lalonde, 1990) and teacher discrimination [see Wong, Eccles & Samerodd, 2003]) and general self-esteem on Indigenous students' academic achievement.

The Present Investigation

This study was designed to address a number of important issues relating to perceived discrimination, general self-esteem, and standardised achievement of Indigenous Australian students. The aims of this research are to:

1. Identify and establish any statistically significant relations between perceived discrimination, general self-esteem, and standardised achievement;
2. Identify how perceived discrimination and self-esteem may independently predict standardised achievement for Indigenous students; and
3. Examine if general self-esteem protects or moderates the potential impact perceived discrimination may have over standardised achievement.

Method

Participants

For the purposes of this investigation, a total of 342 Indigenous secondary school students were drawn from the data set. Of the 342 Indigenous student responses utilized for this study, 45.9% identified as being male and 54.1% identified as being female. Ages ranged from 11 to 16 years, with the mean age being 13.41 years.

Materials

The Personal/Group Discrimination Discrepancy scale (PGDD - Bodkin-Andrews, Craven, & Martin (2006). The PGDD is a nine-item scale designed to unobtrusively measure experiences of perceived discrimination at a personal level (e.g., "People have called me nasty names based on the culture I come from") and a macro or group level (e.g., "Other Australians don't care about the hardships faced by people from my culture."). All items are measured on a 6-point Likert scale. Higher scores indicate greater levels of agreement to experiencing perceived discrimination.

Teacher Discrimination Scale (TDS). The TDS is a five-item scale drawn from the work of Wong, Eccles, and Sameroff (2004) assessing the frequency to which students feel that teachers within their school have discriminated against them due to their race (e.g., How often do you feel that teachers think you are less smart because of your race?).

General Self-Esteem. A six-item general self-esteem measure (e.g., "Overall, I have a lot to be proud of") was obtained from the *Self-Description Questionnaire II – short version*

(Marsh, Ellis, Parada, Richards, & Heubeck, 2005). The scale itself was designed for adolescents aged between 12 to 18 years, and all items were scored on a 6-point Likert scale (1 = False, 6 = True).

Wide Range Achievement Test 3rd Edition (WRAT-3). The WRAT-3 includes a set of two standardized tests that were utilized to assess students' achievement in spelling and maths. Scores are computed based on the number of correct responses and are weighted/normed based on a student's age (Wilkinson, 1993).

Procedure

The initial survey was administered in school halls under exam conditions. To control for literacy levels, the survey was read aloud by the researchers using a microphone. Participants received the full survey and for the most part were requested to circle the correct response.

Statistical Analysis

In addressing the three primary research questions, three separate analyses were conducted with LISREL 8.72 using maximum likelihood estimation. The analyses were:

1. A confirmatory factor analysis (CFA), used to assess the psychometric properties of the measures utilised within this study, and also to identify the preliminary relations between the measures. Based on the advice of Marsh, Balla, and McDonald (1988), for goodness of fit indices, emphasis was placed upon Root-Mean-Square-Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and the Non-Normed Fit Index (NNFI). For the RMSEA, values less than .05 reflect a close fit, and values above .05 for the CFI and NNFI represent excellent fits for the data.
2. A latent path analysis was conducted to determine the extent to which self-esteem and perceived discrimination independently predict both spelling and math standardised achievement. In addition to goodness of fit indices, the path coefficients (β) and the squared multiple correlations (β^2) are also presented.
3. A nested goodness of fit moderating analysis (cf. Jaccard & Wan, 1996) was also conducted whereby the sample was split into high and low self-esteem groups (based on a mean split), and differences in the predictive power of perceived discrimination over standardised achievements for the two groups was examined.

Results

On inspection of the missing data, a total of 10 participants' surveys were deleted from analysis for not answering more than 75% of either the discrimination or self-esteem measures. Even with the missing values of these resulting participants included, the overall response rate resulted in less than 5% of the responses being missing values for each item examined. With the exception of those removed from the analysis, it was deemed that the pattern of missing responses was random. Considering that any method of dealing with the missing data in this study should yield similar results (Tabachnick & Fidell, 2001), the EM substitution method was used for missing data. Univariate outliers were identified within SPSS and were reduced to the next most extreme score.

As can be seen in Table 1, the Personal Discrimination factor had a mean of 2.69, the Group Discrimination factor mean was 3.65 and Teacher Discrimination was 1.87. The mean score for General Self-esteem was 4.65, and with regard to the spelling and math achievement outcomes, the mean scores were 92.56 and 79.14 respectively.

Table 1
Mean scores and reliability estimates for PDS

Factors	Mean	Standard Deviation	Range	Cronbach's Alpha
Personal Discrimination	2.69	1.38	1-6	.88
Group Discrimination	3.65	1.17	1-6	.74
Teacher Discrimination	1.87	1.07	1-5	.89
General Self Esteem	4.65	0.91	1-6	.87
Spelling Achievement	92.56	16.09	45-127	--
Maths Achievement	79.14	16.39	45-130	--

Analysis 1: Confirmatory Factor Analysis for Psychometric Properties and Factor Relations

The full CFA model, including the general self-esteem, the three perceived discrimination factors and the two standardised achievement scores, produced a sound fitting model with an RMSEA of .052, NNFI of .96, and CFI of .97, and all item-to-factor loadings were significant and above the .30 cut off criteria (Hills, 2005). As standardised correlations between the factors ranged from -.34 between teacher discrimination and spelling achievement to .64 for personal and group discrimination (see table 2). Each discrimination factor was significantly correlated with both achievement measures, yet general self-esteem did not significantly correlate with achievement, nor perceived discrimination.

Table 2
CFA Results for All Measures Including Goodness of Fit Criteria, Factors Loadings and Factor Correlations

Goodness of Fit Criteria						
	X ²	df	NNFI	CFI	RMSEA	
	374.45	196	.96	.97	.052	
Factor Loadings						
Item #	General Self-Esteem	Personal Discrimination	Group Discrimination	Teacher Discrimination	Spelling	Math
1	.61	.76	.66	.77	1.00	1.00
2	.74	.76	.65	.84		
3	.64	.74	.68	.87		
4	.67	.81	.62	.84		
5	.61	.81		.67		
6	.39					
Factor correlations						
	General Self-Esteem	Personal Discrimination	Group Discrimination	Teacher Discrimination	Spelling	Math
General Self-Esteem	1.00					
Personal	-.02	1.00				
Group	.10	.64*	1.00			
Teacher	.02	.56*	.39*	1.00		
Spelling	.09	-.22*	-.12*	-.34*	1.00	
Math	.06	-.22*	-.15*	-.30*	.64*	1.00

* Significant at $p < .05$

Analysis 2: Latent Path Analyses and Predictive Power of General Self-Esteem and Discrimination

Figure 1 provides a pictorial representation of the structural model of latent paths with general self-esteem and perceived discrimination both predicting academic achievement. Unlike the previous CFA, due to the moderate correlations between the discrimination factors, a higher order Total Discrimination factor was specified to avoid multicollinearity

issues that often plague correlated predictor variables (Billings & Wroten, 1978; Marsh, Dowson, Pietsch, & Walker, 2004).

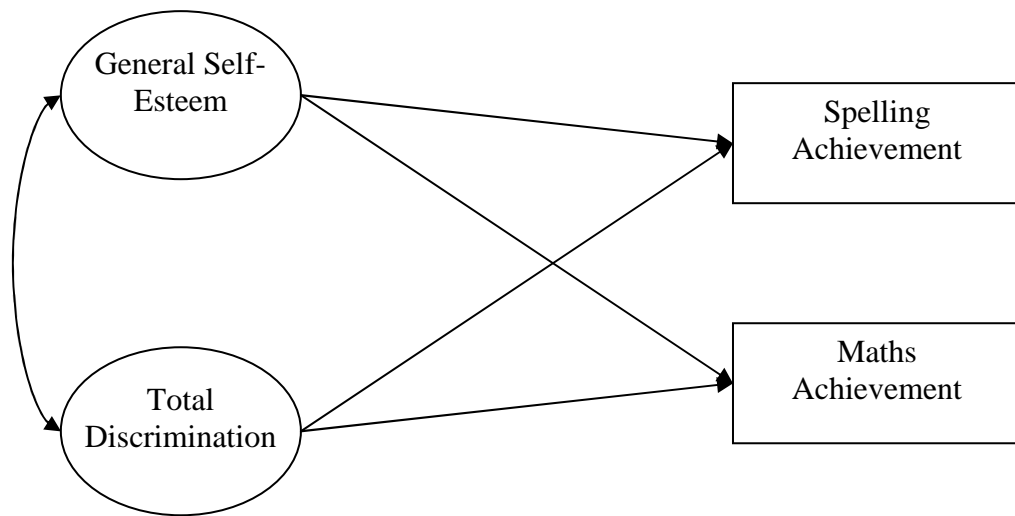


Figure 1. Latent Path Diagram for General Self-esteem and Discrimination Predicting Achievement. .

Table 3 offers results for the latent path analysis seeking to identify the independent predictive power of general self-esteem and discrimination on standardised achievement. Essentially, Total Discrimination can be seen as the combined effects of personal, group, and teacher discrimination on standardised achievement. As can be seen below, the path analyses produced a soundly fitting model (RMSEA = .054, CFI = .97, NNFI = .96), thus the implementation of the higher order factor did not reduce psychometric properties of the model to an unacceptable level.

Table 3
Latent Path Analysis for Predictor and Outcomes

Goodness of Fit Criteria				
X ²	df	NNFI	CFI	RMSEA
395.11	202	.96	.97	.054
General Self-Esteem		Total Discrimination		
	β	%VE	β	%VE
Spelling	.10	0.93%	-.29*	8.24%
Maths	.06	0.36%	-.28*	7.81%

* %VE = Percentage of Variance Explained. Significant at $p < .0001$

With regard to the predictive power of general self-esteem and total discrimination, it can be seen that general self-esteem did not significantly predict either spelling ($\beta = .10$, $p = ns$) or math ($\beta = .06$, $p = ns$) achievement, whereas total discrimination did significantly and negatively predict both spelling ($\beta = -.29$, $p < .0001$) and math achievement ($\beta = -.28$, $p < .0001$). With regard to the variance explained for the achievement measures, a total of 9.27% of the variance for spelling achievement was explained, with total discrimination accounting for 8.24% of that variance. For math achievement, 8.17% of the variance was explained with total discrimination accounting for 7.81% of the variance.

Analysis 3: Moderating Effect of Self-Esteem over the Relations between Discrimination and Achievement

Figure 2 offers the structural path diagram for the predictive power of total discrimination on achievement, moderated by self-esteem. Beta coefficients above the path-line indicate Indigenous students with a higher self-esteem, and beta coefficients below the path-line indicate Indigenous students with lower self-esteem. For the *high self-esteem* group ($n = 198$), it can be seen that total discrimination significantly predicts both spelling achievement ($\beta = -.34, p < .0001; \beta^2 = .12$) and math achievement ($\beta = -.39, p < .0001; \beta^2 = .15$). For the *low self-esteem* group ($n = 134$), total discrimination did not significantly predict spelling achievement ($\beta = -.19, p = ns; \beta^2 = .04$) or maths achievement ($\beta = -.08, p = ns; \beta^2 = .01$).

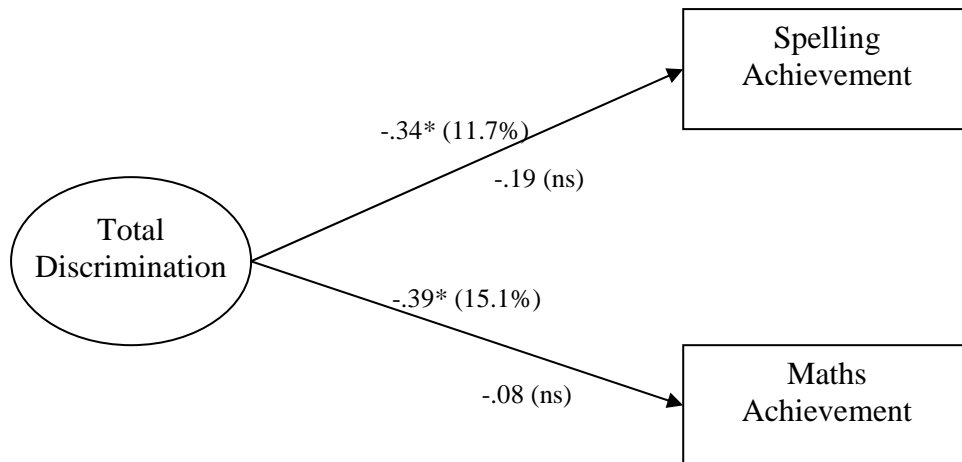


Figure 2. Moderating Effects of Self-Esteem over Total Discrimination’s Predictive Power for Achievement
 * $p < .001$

Note. Beta values above the path line represent the High-Self-Esteem group, whereas beta values below the path line represent the Low Self-Esteem Group. Values within brackets constitute the percentage of variance explained

By running a second model, whereby the predictive paths are set to be equal between the high and low self-esteem groups, a Chi-Square difference test can be used to identify significant differences between the originally free model and the model with the paths set to be equal (Jaccard & Wan, 1996). In essence, this allows the reader to determine if the designated predictive paths for the high and low self-esteem groups differed significantly. As can be seen from Table 4, the free (Model 1) and invariant (Model 2) models differed significantly ($p < .01$). Referring back to Figure 2, this result reflects the substantial difference that can be observed in the beta values between the high and low Self-esteem groups.

Table 4
 Results of the Chi-Square Difference Test

	Chi-Square	Degrees of Freedom	RMSEA	CFI	NNFI
Model 1 (free)	439.35	236	.07	.96	.98
Model 2 (equal)	427.47	233	.07	.96	.96
Difference	11.88*	3			

*significant at $p < .01$

Discussion

Through analyses utilising varying structural equation modelling techniques, a number of significant findings emerged. Firstly, in the process of examining the first research question, it was determined that the measures utilised within this study were all psychometrically valid instruments for this sample of Indigenous Australian high-school students. This result offers support for the theory and research on which these instruments are based and the validity of these measures for Indigenous students. Preliminary factor correlations were consistent with previous research identifying no significant relations between general self-esteem and educational achievement for Indigenous students (e.g., Craven & Marsh, 2004; Craven & Tucker, 2003; Pedersen & Walker, 2000; Purdie & Mcrindle, 2004; Zubrick et al., 2006). That is, within this study, general self-esteem was not significantly associated with either spelling or maths achievement. However, all three measures of perceived discrimination were significantly and negatively associated with both spelling and maths achievement. These results suggest that as Indigenous students are more likely to perceive discrimination, their performance in standardised testing decreased. Secondly, further analyses substantiated these findings by revealing that general self-esteem did not significantly and independently account for any variance in the achievement scores, whereas the combined discrimination measures accounted for 8.24% of the variance in spelling achievement and 7.81% of the variance in math achievement scores.

Finally, the moderating analysis achieved significance, further substantiating these results. When the sample was split into high and low Self-esteem groups, the high Self-esteem group's perceived discrimination accounted for more significant variance in the achievement scores for both spelling (11.7%) and math (15.1%) achievement than the low self-esteem group's spelling (4%) and math (1%) achievement scores; whereby the variance explained was not significant for either outcome. The Chi-square difference test suggested that these differences between the high and low self-esteem groups were significant for the moderating analysis. Some questions though may be raised as to the adequacy of the Chi-Square difference test, as some authors suggest that it is too strongly influenced by large sample sizes (Coote, 2004; Marsh, Balla & Hau, 1996), but considering the moderate sample size utilised for the moderating analysis, such a criticism may be unfounded. Overall, the moderating analysis suggests that if an Indigenous student holds a higher general self-esteem, than they may be significantly more susceptible to the negative effects of perceived discrimination on their academic performance. This result is made even more pertinent when considering the original path analysis where it was found that higher levels of Self-esteem were not associated with stronger achievement scores, independent of the effects of perceived discrimination.

Despite Branden's (1994) claim that self-esteem is an essential component of resilience and strength for any one individual, these findings suggest that not only is a heightened general self-esteem inadequate for increasing levels of school success for Indigenous students, but also that higher levels of self-esteem may perhaps result in Indigenous students being more vulnerable to the effects of racism. With this in mind, one could be left with a disquieting feeling of hopelessness, as numerous reports calling for interventions within Indigenous education have often espoused the need to strengthen Indigenous students' Self-esteem, but at what cost? Interestingly, Crocker and Clark (2004) highlight the potential costs of perusing heightened levels of self-esteem, and note that "people pursue self-esteem by trying to satisfy their beliefs about what they need to be or do to have worth or value; this pursuit has temporary emotional benefits when people succeed, but big costs when they fail" (p. 407). In failure, or at least facing experiences that may contradict one's Self-esteem (e.g., racism), individuals may only be left with dismissive strategies that act to maintain one's self-esteem despite evidence to the contrary. For

example, Crocker and Clark suggest that people may question the validity of the source of the negative information, raising the possibility of dismissing, or even avoiding, environments where such negative information may be produced.

This failure avoidance approach could well be linked to the findings of Verkuyten and Thijs (2004) which were reviewed earlier. That is discrimination within the schooling system may not affect self-esteem directly, but it does seem to moderate, or lessen the strength of relation between academic confidence and overall self-esteem by potentially making academic self-confidence less important to one's overall self-perceptions. Indirectly, such results have supported by the work of Mellor (2004), who found that Indigenous Australians may frequently adopt avoidance orientated coping strategies (e.g. withdrawal, resignation, avoidance. See also Allport, 1954). It must be noted that the avoidance strategies listed by Mellor were but a few of a wide range of diverse coping strategies (many of which were constructive) utilised by Indigenous Australians, they do highlight the potential negative impact that racism can and does have. As emphasised by Zubrick et al. (2005), attempts to increase the wellbeing of Indigenous adolescents must recognise the

complex interplay between a range of family and community factors, including exposure to family violence, experience of racism and association with peers who have attempted suicide. Many of these risk factors are associated with chronic levels of stress that underpin Aboriginal disadvantage (p. 360).

This complexity of determinants that may contribute to the disadvantaged status of Indigenous Australians is one of many limitations that the authors of this paper recognise, and ask that future researchers consider. Although this paper does highlight a perspective on how racial discrimination may impact upon Indigenous students' educational outcomes, and seemingly belittle the role of general self-esteem, these results must be viewed with caution. For example, as reviewed earlier, self-esteem has been found to play a vital role in enhancing an individual's emotional well-being (Zubrick et al., 2005, see also Chioqueta and Stiles, 2007; De Man & Gutierrez, 2002). Additionally, the three-factor conceptualisation of perceived discrimination within this investigation is somewhat limited, as some research has suggested that perceptions of discrimination may incorporate a number of other dimensions stemming from varying institutional (e.g., domestic, employment, and services) and cultural foundations (Mellor, 2003; Paradies, 2006a; Utsey & Ponterotto, 1996). Additionally, the quality or type of such perceptions must also be considered as variation in not only the intensity, but frequency, timing, and duration may magnify its negative affect (Paradies, 2006a). A final limitation within this study is in reference to the reported spelling and maths achievement outcomes, in that these outcome variables have not been validated for Australian samples. Indeed, the normalised scoring for the WRAT 3 was derived from a US population, thus the cross-cultural validity for this measure is questionable (Parker, 2002). Although the WRAT-3 is far from an exhaustive or representative measure of academic achievement within the Australian educational system, for the purposes of this study, it did allow an examination of how variation in reports of general self-esteem and perceived discrimination may be related to spelling and maths achievement. Future research could seek to replicate these findings with larger Indigenous Australian samples, and extend such analyses to other outcomes such as recent research exploring discrimination's relations with physical and mental health (Larson, Gilles, Goward & Coffin, 2007; Paradies 2006b).

In conclusion, it is almost undeniable that Indigenous groups across a number of first world countries are still amongst the most disadvantaged minority groups in the world, and that Indigenous Australians are no exception (Bradley, Draca, Green, & Leeves, 2007). There is growing evidence that suggests that racism, in all its forms, does play a critical role in maintaining this disadvantaged status (Mellor, 2003, 2004; Larson et al, 2007; Paradies 2006;

Zubrick et al., 2005), hence we advocate that intervention could be strengthened by addressing racism. For in the words of Noel Pearson (2007):

There is a far better position for... people to take: that of acknowledgment, of the past, and of its legacy in the present. Such a position recognises that racism is not a contrivance, that Indigenous people endure hurt and confront barriers as a result of racism, and this needs to be answered and countered (p. 27).

References

- Alves-artins, M. Peixoto, F. Gouveia-Pereira, M. Amaral, V. & Pedro, I. (2002). Self-esteem and Academic Achievement Among Adolescents. *Educational Psychology*, 22(1), 51-62.
- Australian Bureau of Statistics. (2006). *National Aboriginal and Torres Strait Islander Health Survey: Australia*. Australian Bureau of Statistic: Canberra.
- Barry, D.T. & Grilo, C.M. (2003). Cultural Self-Esteem, and Demographic Correlates of Perception of Personal and Group Discrimination Among East Asian Immigrants. *American Journal of Orthopsychiatry*, 73(2), 223-229
- Billings, R. S. & Wroten, S. P. (1978). Use of Path Analysis in Industrial/Organisational Psychology: Criticisms and Suggestions. *Journal of Applied Psychology*, 63(6), 677-688.
- Bin-Sallik, M. (2005). Preface in Craven, R. G., Tucker, A., Munns, G., Hinkley, J., Marsh, H.W., and Simpson, K. *Indigenous students' aspirations: Dreams, Perceptions and Realities*. DEST. Canberra: Commonwealth of Australia
- Bin-Sallik, M., Blomeley, N., Flowers, R., & Hughes, P. (1994a Vol.1; 1994b Vol. 2). *Review and analysis of literature relating to Aboriginal and Torres Strait Islander Education. Part 1 Summary*. Canberra: DEET.
- Bodkin-Andrews, G. H., & Craven, R.G. W. (2006). Perceived Discrimination and Indigenous Australian Students' School Related Attitudes. Presented at *4th International Biennial SELF Research Conference*, Michigan. July 2006.
- Bodkin-Andrews, G. H., Craven, R.G., Marsh, H.W. & Marin, A. (2005). Construct Validation of the Self-Description Questionnaire II (Short Version) for Indigenous Australian Secondary School Students. Presented at November *AARE Conference Parramatta*.
- Bortoli, L.D. & Cresswell, J. (2004). *Australia's Indigenous Students in PISA 2000: Results from an International Study*. Australian Council For Education Research: Victoria.
- Bradley, S., Draca, M. Green, C. & Leeves, G. (2007). The Magnitude of Educational Disadvantage of Indigenous minority Groups in Australia. *Journal of Population Economics*, 20, 547-569.
- Branden, N. (1994). Our Urgent Need for Self-Esteem. *Executive Excellence*, 11(5), 14-15.
- Brown, J. D. (1993). Self-esteem and self-evaluation: Feeling is believing. In J. Suls (ed.), *Psychological Perspectives on the Self* (Vol 4, pp. 27-58). Hillsdale, NJ: Lawrence Erlbaum.
- Choiqueta, A. P. & Stiles, T. C. (2007). The Relationship Between Psychological Buffers, Hopelessness, and Suicidal Ideation: Identification of Protective Factors. *Crisis*, 28(2). 67-73.
- Coote, L. (2004). *Introduction to Structural Equation Modeling Using LISREL*. ACT: The Australian National University
- Craven, R. & Bodkin-Andrews, G. (2006). New Solutions for Addressing Indigenous Mental Health: A Call to Counsellors to Introduce the New Positive Psychology of Success. *Australian Journal of Guidance and Counselling*, 16(1), 41-54.
- Craven, R. & Tucker, A. (2003). *Enhancing Self-Concept and Educational Outcomes for Indigenous Students: AECG Members' Views and Suggestions for Strategic Research Directions*. NSW Aboriginal Education Consultative Group: Sydney.
- Craven, R. G. & Marsh, H. W. (2004). The Challenge for Counsellors: Understanding and Addressing Indigenous Secondary Students' Aspirations, Self-concepts and Barriers to Achieving their Aspirations. *Australian Journal of Guidance and Counselling*, 14(1), 16-33

- Craven, R. & Tucker, A. (2003). *Enhancing Self-Concept and Educational Outcomes for Indigenous Students: AECG Members' Views and Suggestions for Strategic Research Directions*. NSW Aboriginal Education Consultative Group: Sydney.
- Crocker, J. & Park, L. E. (2004). The Costly Pursuit of Self-Esteem. *Psychological Bulletin*, 130(3), 392-414.
- De Man, A. F. & Gutierrez, B. I. B. (2002). The relationship between level of self-esteem and suicidal ideation with stability of self-esteem as a moderator. *Canadian Journal of Behavioural Science*, 34, 235-238.
- Department of Education Science and Training (2002). *Achieving Equitable and Appropriate Outcomes: Indigenous Australians in Higher Education*. Commonwealth of Australia: Australia.
- Department of Education Science and Training (2003). *National Report for Indigenous Education Science and Training, 2002*. Commonwealth of Australia: Canberra.
- Department of Education Science and Training (2005). *National Report to Parliament on Indigenous Education Science and Training, 2003*. Commonwealth of Australia: Canberra
- Department of Education Science and Training (2006). *National Report to Parliament on Indigenous Education Science and Training, 2004*. Commonwealth of Australia: Canberra
- Hattie, J. (1992). *Self-Concept*. Lawrence Erlbaum Associates, Publishers: New Jersey
- Hattie, J. (2003). *Teachers make a difference. What is the research evidence?* Paper presented at the Joint New Zealand Association for Research in Education and Australian Association for Research in Education conference, Auckland, December.
- Hills., A. M. (2005). *Foolproof Guide to Statistics Using SPSS*. Pearson Education Australia: Australia
- Jaccard, J. & Wan C. K. (1996). *LISREL Approaches to Interaction Effects in Multiple Regression*. United States of America: Sage Publications.
- Jonas, B. (2003). *Social Justice Report 2003*. The Fifth Social Justice Report by Dr. William Jonas. Aboriginal and Torres Strait Islander Social Justice Commissioner, Sydney: HREOC.
- Larson, A., Gillies, M. Howard, P. J. & Coffin, J. (2007). It's enough to make you sick: the impact of racism on the health of Aboriginal Australians. *Australian and New Zealand Journal of Public Health*, 31(4), 322-329.
- Lester, J. (2000). *Evaluative research into the Office of the Board of Studies', Aboriginal Careers Aspiration Program for Aboriginal students in NSW high schools*. Ryde, Sydney: Board of Studies (NSW).
- Marsh, H. W. (in press). Application of confirmatory factor analysis and structural equation modelling in sport/exercise psychology. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed.). New York, NY: Wiley.
- Marsh, H.W., Balla, J.R. & McDonald, R. (1988). Goodness of Fit Indices in Confirmatory Factor Analysis: The Effect of Sample Size. *Psychological Bulletin*, 103(3), 391-410
- Marsh, H. W., Balla, J. R., & Hau, K. T. (1996). An evaluation of incremental fit indices: A clarification of mathematical and empirical processes. In Marcoulides & R. E. Schumacker (Eds.), *Advanced Structural Equation Modeling Techniques* (pp. 315-353). Hillsdale, NJ: Erlbaum.
- Marsh, H.W., Byrne, B.M., & Shavelson, R.J. (1992). A Multidimensional, Hierarchical Self-Concept. In Brinthaup, T. M., & Lipka, R. P. (Eds.). *Self: Definitional and methodological issues*. State University of New York Press: US, (pp. 44-95)
- Marsh, H. W., Ellis, L.A., Parada, R.H. (2005) A Short Version of the Self Description Questionnaire II: Operationalizing Criteria for Short-Form Evaluation With New

- Applications of Confirmatory Factor Analyses. *Psychological Assessment*, 17(1), 81-102
- Marsh, H. W., Dowson, M., Pietsch, J. & Walker, R. (2004). Why Multicollinearity Matters: A Reexamination of Relations Between Self-Efficacy, Self-Concept and Achievement. *Journal of Educational Psychology*. 96(3), 518-522.
- Martin, A. J. (2006). A Motivational Psychology for the Education of Indigenous Australian Students. *The Australian Journal of Indigenous Education*. 35, 30-42.
- Mellor, D. (2004). Responses to Racism: A taxonomy of Coping styles Used by Aboriginal Australians. *Australian Journal of Orthopsychiatry*, 74(1). 56-71.
- NSW Department of Education and Training and NSW Aboriginal Education Consultative Group Inc (2004). *The Report of The Review of Aboriginal Education*. NSW Department of Education and Training: Darlinghurst NSW.
- Paradies, Y. C. (2006a). Defining, conceptualizing and characterizing racism in health research. *Critical Public Health*, 16(2). 143-157.
- Paradies, Y.C. (2006b). A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology*, 35, 888-901.
- Parker, G. (2002). Wide Range Achievement Test: Test Review. *Journal of Occupational Psychology, Employment and Disability*, 5(1). 61-66.
- Pearson, N. (2007). No More Victims. *New Statesman*, 27.
- Pedersen, A. & Walker, I. (2000). Urban Aboriginal-Australian and Anglo-Australian Children: In-Group Preference, Self-Concept, and Teachers' Academic Evaluations. *Journal of Community & Applied Social Psychology*, 10, 183-197.
- Purdie, N. & McCrindle, A. (2004). Measurement of self-concept among Indigenous and non-Indigenous Australian students. *Australian Journal of Psychology*, 56(1), 50-62.
- Purdie, N., Tripcony, P., Boulton-Lewis, G., Fanshawe, J. & Gunstone, A. (2000). *Positive Self-Identity for Indigenous Students and its Relationship to School Outcomes*. Queensland University of Technology and Department of Education, Science and Training: ACT
- Rowe, K.J. (2003). The Importance of Teacher Quality as a Key Determinant of Students' Experiences and Outcomes of Schooling. Keynote Address for the ACER Research Conference, Melbourne, October, 2003
- Shavelson, R.J., Hubner, J.J. & Stanton, G.C. (1976). Self-Concept: Validation of Construct Interpretations. *Review of Educational Research*. 46(3), 407-411.
- Swan, P., & Raphael, B. (1995). *Ways Forward: National Aboriginal and Torres Strait Islander Mental Health Policy – National Consultancy Report*. Australian Government Publishing Service: Canberra.
- Swann, W. B., Chang-Schneider, C. & McClarty, K. L. (2007). Do People's Self-Views Matter? Self-Concept, and Self-Esteem in Everyday Life. *American Psychologist*, 62 (2). 84-94.
- Tabachnick, B.G., & Fidell, L.S. (2001). *Using Multivariate Statistics*, 4th Ed. Allyn and Bacon: USA
- Taylor, D. M., Wright, S. C., Moghaddam, F. M., & Lalonde, R. N. (1990). The personal/group discrimination discrepancy: Perceiving my group but not myself to be a target of discrimination. *Personality and Social Psychology Bulletin*, 16, 256-262
- Verkuyten, M. & Thijs, J. (2004). Psychological Disidentification with the Academic Domain Among Ethnic Minority Adolescents in The Netherlands. *British Journal of Educational Psychology*. 74, 109-125.
- Wilkinson, G. S. (1993). *The Wide Range Achievement Test–3rd edition: Administration manual*. Wilmington, DE: Wide Range, Inc.

- Wong, C.A., Eccles, J.S. & Sameroff, A. (2003). Ethnic Identification: The Influence on Africans' and Whites' School and Socio-economic Adjustment. *Journal of Personality*, 71(6), 1197-1233.
- Zimmerman, M. A., Copeland, L. A., Shope, J. T. & Dielman, T. E. (1997). A Longitudinal Study of Self-Esteem: Implications for Adolescent Development. *Journal of Youth and Adolescence*, 26 (2), 117-141.
- Zubrick, S. R., Silburn, S. R., De Maio, J. A., Shepherd, C., Griffin, J. A, Dalby R. B., Mitrou, F.G., Lawrence, D. M, Hayward, C., Pearson, G., Milroy, H., Milroy, J. & Cox, A. (2006). *The Western Australian Aboriginal Child Health Survey: Improving the Educational Experiences of Aboriginal Children and Young People*. Perth: Curtin University of Technology and Telethon Institute for Child Health Research.
- Zubrick, S. R., Silburn, S. R., Lawrence D. M., Mitrou, F. G. , Dalby, R. B., Blair, E. M., Griffin, J., Milroy, H., De Maio, J. A., Cox, A. & Li, J. (2005) *The Western Australian Aboriginal Child Health Survey: The Social and Emotional Wellbeing of Aboriginal Children and Young People*. Perth: Curtin University of Technology and Telethon Institute for Child Health Research.