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ABSTRACT

An individual's school motivation and achievement are products of a complex set of interacting motivational goals, sense of self, and self-concept variables. Motivational goals may be differentially salient to individuals from different cultural backgrounds; and sense of self, including academic self-concept, may vary across cultural groups. This paper examines the nature of Australian Aboriginal students' motivational goals, the nature of their academic self-concepts, and their sense of self within school settings. Also examined are the relationships of these variables to intention to complete further schooling, affect toward school, valuing school, student achievement, and school attendance. The Inventory of School Motivation and the Self Description Questionnaire were administered to 129 Aboriginal and 810 non-Aboriginal students in grades 7-9 in 6 rural and urban schools in New South Wales. The results suggest that Aboriginal students, even in remote locations, were motivated by the same motives and self beliefs as influenced students from non-Aboriginal and largely urban backgrounds. These results tell a positive story about the capacity of Aboriginal children to do well at school given the right sort of motivational school environment and indicate the need for further research into the causes of the relatively poor academic performance and persistence of Aboriginal students. (Contains 44 references.) (SV)

# RELATIONSHIPS BETWEEN MOTIVATIONAL GOALS, SENSE OF SELF, SELF-CONCEPT AND ACADEMIC ACHIEVEMENT: A COMPARATIVE STUDY WITH ABORIGINAL AND NON-ABORIGINAL STUDENTS

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Paper presented at the 82nd Annual Meeting of the American Educational Research Association
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# Relationships Between Motivational Goals, Sense of Self, Self-concept and Academic Achievement: A Comparative Study with Aboriginal and Non- Aboriginal Students

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## Abstract

School motivation and achievement for an individual are the products of a complex set of interacting motivational goals, sense of self, and self-concept variables. Motivational goals may be differentially salient to individuals from different cultural backgrounds, and sense of self, including academic self concept, may vary across cultural groups. This paper describes a project designed to examine the nature of motivational goals held by Australian Aboriginal students; the nature of their academic self concepts, and the nature of their sense of self within school settings. I also examine the impact of these variables on three valued school outcomes: intention to complete further schooling, affect to school, and valuing school, as well as their relationship to student achievement and school attendance. Comparisons are drawn with non-Aboriginal students. Participants were drawn from Grades 7, 8 and 9 at three rural and three urban high schools in NSW (N=939, Aboriginal N=129, non-Aboriginal=810). Data obtained using the Inventory of School Motivation and the Self Description Questionnaire were analysed using MANOVA and multiple regression. It would appear from the results that Aboriginal students, even in remote locations, are motivated by the same motives and self beliefs as influence students from non-Aboriginal and largely urban backgrounds. These results tell a positive story regarding the capacity of Aboriginal children to do well at school given the right sort of motivational school environment. Further research is still needed to examine what causes are implicated in the relatively poor academic performance and retention of Aboriginal students in the light of these findings.

key words
goal theory
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self concept
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Children from many indigenous cultural communities, such as Aboriginal Australians appear to be at a particular disadvantage with regard to academic achievement and school retention. Many demographic studies indicate that retention rates and school achievement for these groups lag far behind mainstream groups, and in some cases, retention rates appear to be worsening (see, for example, Dingman, Mroczka & Brady, 1995). Many factors have been considered implicated in this situation. Socio-economic factors such as ill health, poverty, high unemployment, poor job prospects and racial prejudice are no doubt involved. Geographic and locale factors such as the placement of poorly prepared and inexperienced teachers in remote areas, high teacher turnover, isolation from mainstream experiences and lack of resources also have an impact on the quality of education presented to these children. Home background factors such as the relatively recent introduction of compulsory education for Aboriginal people, level of parental understanding of the importance and function of education, and level of parental encouragement and appropriate support for children to continue schooling, substandard housing and overcrowding giving poor facilities for home study, and relatively few Aboriginal models of success in a school environment may also be implicated. Other causes posited from time to time include sociocultural factors such as: language skills, discipline and academic achievement motivation, cognitive, motivational and learning style differences, socialization practices at variance to mainstream culture, peer group influences antipathetic to formal schooling, shyness, and poor attendance.

It is also commonly thought that a cultural conflict between the values and goals of schooling and the values and goals of the Aboriginal communities predispose children from these communities to drop-out (see, for example, Fogarty & White, 1994; Ledlow, 1992). Authors discussing this issue often suggest that while mainstream schools and teachers value mastery, future time orientation, competition and success, individuality and aggression, their Aboriginal pupils, in contrast, value harmony, present time orientation, maintenance of the status quo, anonymity, submissiveness, group orientation and non competitiveness. Australian Aboriginal children are often stereotyped, therefore, as lacking the motivation and the cognitive processes needed to achieve and that they come from homes that lack the socialization practices needed to inculcate achievement values in children.

While the above factors may have an impact on the motivation and performance of Aboriginal students in mainstream school settings, and on their desire to complete schooling, there are inadequate research data available on many of these variables. Indeed, many of these beliefs about the lack of achievement of Aboriginal children in school settings are based upon little more than folk-loric tradition passed on from teacher to teacher, or academic to academic. Little hard data exist to guide communities, schools and teachers in the development of programs to improve the poor achievement levels of Aboriginal students. Furthermore, many of these posited causes, such as socio-economic factors, lie outside the influence of the school and so remain intractable unless more effective social equality policies are introduced at a national level. Nevertheless, some of the above factors, particularly those dealing with motivational and self-concept factors lie within the influence of schools, and if appropriate data are available which describes motivational and self-concept characteristics of these children, schools may modify their programs to more effectively suit indigenous students.

In this study I concentrate on psychological motivational and self-concept variables and their impact on the school achievement of Australian Aboriginal children. I examine, through a large scale psychometric study, the nature of the achievement goals and self-concepts in English, mathematics and general academic self-concept held by Aboriginal children in school settings. I then compare these to achievement goals and level of self-concept held by Anglo and immigrant Australian children in order to ascertain whether there are the suspected differences between these groups. Furthermore, I examine whether Western groups are, thereby, better prepared to "survive" within school systems than Aboriginal children because of the compatability of their motivational goals and those fostered within the school system. In order to study this latter contention I examine the relationship of the goals and

self-concepts held by Aboriginal children to a range of school related achievement measures such as school adjustment, academic achievement, attendance at school, intention to go on to further education and desired occupation after leaving school.

**Achievement Goal Theory and Self-Concept Theory**

The study is grounded in achievement goal and self-concept theory. The goal theory of achievement motivation argues that the goals fostered by schools have dramatic consequences for whether children develop a sense of efficacy and a willingness to try hard and take on challenges, or whether they avoid challenging tasks, giving up when faced with failure (See Ames, 1984, 1992; Covington, 1992; Elliott & Dweck, 1988; Maehr, 1989; Maehr & Midgley, 1991). Goals are cognitive representations of the different purposes that students may have in different achievement situations, and are presumed to guide students' behaviour, cognition, and affect as they become involved in academic work (Ames, 1992; Dweck & Elliott, 1983; Pintrich, Marx & Boyle, 1993; Wentzel, 1991). Two goals have received considerable attention from researchers: mastery goals and performance goals. Central to a mastery goal is the belief that effort leads to success, and the focus of attention is on the intrinsic value of learning. Mastery goals and their achievement are "self-referenced". In contrast, central to a performance goal is a focus on one's ability and sense of self-worth. Ability is shown by doing better than others, by surpassing norms, or by achieving success with little effort. Public recognition for doing better than others through grades, rewards and approval from others, is an important element of performance goal orientation. Performance goals and achievement are, therefore, "other referenced". In more recent theorising the performance goal construct has been partitioned into performance approach and performance avoidance goals to help interpret previous inconsistent findings regarding the relationship of this goal to valued achievement outcomes (Elliott, 1997; Urdan, 1997). Implicit in both mastery and performance goals is a focus on individualism where priority is given to the goals of individuals. Such an approach is very much tied to a "Western" conception of what are the appropriate goals of schooling. There is little attention paid to other goals such as working to preserve in-group integrity, interdependence of members and harmonious relationships which may be more salient to students from non-Western cultural backgrounds such as Aboriginal children (Kagitcibasi & Berry, 1989; Triandis, 1995; Triandis et al, 1993; Schwartz, 1990). Furthermore, the bipolar mastery versus performance continuum, while giving us valuable insights into some aspects of the motivational process and the ways in which schools may emphasize one or other of these two goal structures, suggests that these goals are mutually exclusive. Recent theorizing and research, however, suggest that these are not dichotomous and that individuals may hold both mastery and performance goals, varying in salience, depending on the nature of the task, the school environment and the broader social and educational context of the institution (see e.g., Blumenfeld, 1992; Meece, 1991; Pintrich & Garcia, 1991; Wentzel, 1991). Students may also hold multiple goals such as a desire to please one's parents, to be important in the peer group, or to preserve one's cultural identity, each of which may impact upon their level of motivation for particular tasks in school settings. Indeed, these multiple goals interact providing a complex framework of motivational determinants of action. (see Blumenfeld, 1992; McInerney, 1989ab, 1990, 1991, 1994ab, 1995; McInerney & Sinclair, 1992; McInerney & Swisher, 1995; Pintrich & Schrauben, 1992). In this particular study the range of goals has been expanded to reflect a multiple goal approach and include: Task-effort, Praise, Extrinsic Rewards, Competition, Social Status, Affiliation, Social Concern. To these I added four general motivation scales, viz, Mastery General, Performance General, Social General, and Global Motivation. Major foci of this study are, therefore, to examine the relevance of these goals to Aboriginal children, which are the important and not so important ones, and how these patterns are similar to, or different from, those of the mainstream group included in the study.

It is also widely accepted that an individual's self concept is related to school adjustment, satisfaction and achievement (Marsh, 1990, 1993; Marsh & Craven, 1997; see also Graham, 1994;

Sanders, 1987).). International research suggests, paradoxically, that the self-concept of indigenous and minority groups often surpasses that of their White peers, while their achievement rates are, in general, lower. In order to examine the nature and importance of self concept to the Aboriginal students participating in this study three self-concept scales, drawn from Marsh's SDQ (Marsh, 1992) were included, viz, English Self Concept, Maths Self-Concept and General Academic Self-Concept. To these scales were added three other sense of self scales namely, self esteem, self reliance and sense of purpose (see McInerney, Roche, McInerney & Marsh, 1997 and Maehr and Braskamp 1984). Major foci of the study, are also therefore, to examine the nature of sense of self and self-concept for Aboriginal children; how this relates to their salient motivational goals and valued educational outcomes, and how these patterns are similar to, or different from the mainstream group included in the study.

**Methodology**

**Participants**

Participants were drawn from Grades 7, 8 and 9 at three rural and three urban high schools in NSW (N=939). There were 484 males and 433 females (22 missing data) and their average age was 13 years. For purposes of the study reported here I will specifically consider the data coming from the subset of Aboriginal students attending four of these high schools, namely, Bourke, Brewarrina, Walgett and Matraville. There were 129 Aboriginal children (67 males and 62 females) and their average age was 13 years. Permission was obtained from the Department of Education and Training (DET) and the University's Human Ethics Committee to conduct the study. Informed consent forms were completed by parents of the students, and all students were told that their completion of the survey was voluntary. Details of the purpose of the study were repeated at the beginning of each survey session. Survey sessions were conducted with intact class groups, or where the numbers were small, as in the rural centres, in full school groups. No teachers were involved in the administration of the survey.

**Instruments**

The Inventory of School Motivation Revised (ISMR), (see McInerney & Sinclair, 1991, 1992; McInerney, Roche, McInerney & Marsh, 1997 for analyses of the original ISM and McInerney & Yeung, 2000 for an analysis of the ISMR) consists of 114 questions relating to the following motivational goals and sense of self values influencing learning:

**Task-Effort:** Interest in the task and willingness to expend effort to improve schoolwork. Examples of items representing this dimension are "I like to see that I am improving in my schoolwork" and "I always try hard to understand something new in my school work".

**Competitive:** Competitiveness in learning. Examples of this dimension are "I like to compete with others at school" and "I am only happy when I am one of the best in the class".

**Social Status:** Seeking social status through group leadership. Examples of this dimension are "I like being in charge of a group" and "I work hard at school to have the class notice me".

**Praise:** Social recognition for schoolwork. Examples of this dimension are "I work best when I am praised at school" and "I like to be encouraged for my schoolwork".

**Extrinsic:** Tangible rewards for schoolwork. Examples of this dimension are "I work best in class when I get rewards" and "Getting good marks is everything for me".

**Affiliation (a):** Belonging to a group when doing schoolwork. Examples of the dimension are "I can do my best work at school when I work with others" and "I like to work with other students at school rather than work alone".

**Affiliation (b):** Positive influence of friends while doing schoolwork. Examples of this dimension are "If my friends stay on at school longer I will stay on at school longer" and "It's important to me to have my friend's help with schoolwork." Only Affiliation (a) was used in the multiple regression analyses as the inclusion of both may have contributed to multicollinearity.

**Social Concern:** Concern for other students and a willingness to help them with their school work. Examples of this dimension are "It is important for students to help each other at school" and "I like helping other students with their school work".
**Self reliance**: Self-regulation within academic settings. Examples of items representing this dimension are "I do not need anyone to tell me to work hard" and "Difficult school work does not bother me if I am working alone".
**Self-esteem:** Confidence about general academic ability at school. Examples of items representing this dimension are "I am bright enough to finish high school" and "I can succeed at whatever I do at school".
**Sense of purpose:** Valuing school for the future. Examples of items representing this dimension are "It is good for me to plan ahead to complete high school" and "I want to do well at school to have a good future".

**Academic Self-concepts**
**Academic self-concepts** are concerned with how students see their abilities generally, and specifically in terms of English and Mathematics. It is believed that the structure of students' academic self-concept, like the structure of motivation, may also be both multi-dimensional and hierarchical. In the present research we are concerned with students' general academic self-concept and their English and Mathematics self-concepts. Items were selected from Marsh's SDQ instrument namely:
**General Academic Self-concept** pertains to the idea that students generally hold self-conceptions regarding their overall abilities. Examples of this dimension are 'I get good marks in most school subjects" and 'I learn things quickly in most school subjects".

**English Self-concept** pertains to the idea that students hold a self-conception of their English abilities. Examples of this dimension are "I am good at English" and "Work in English is easy for me".
**Mathematics Self-concept** pertains to the idea that students hold a self-conception of their Mathematics abilities. Examples of this dimension are "I have always done well in Mathematics" and "I learn things quickly in Mathematics".

**General motivation scales**
Four general motivation scales were also included to reflect mastery, performance, social and global motivational influences (see McInerney, Yeung, & McInerney, 2000).

Three outcome measures were used in the study, namely, affect to school (affect), valuing school (value) and intention to complete further education (furthed).

Items were answered using a Likert-type scale from strongly agree (5) to strongly disagree (1).

To guide analyses it was hypothesized that the Aboriginal students would be significantly stronger on the social goals (viz, affiliation (a) and affiliation (b), social concern, social general) and significantly weaker on the individual goals (viz, task-effort, praise, extrinsic, competition, social status, mastery general, and performance general). It was hypothesized that their would be no differences between the Aboriginal and non-Aboriginal students on the academic self concept scales (see Marsh, 1987), but significantly weaker on the sense of self scales (viz, self reliance, self esteem and sense of purpose). It was also hypothesised that the Aboriginal students would be significantly weaker on affect to school, valuing school and intending to complete further education.

**Analyses and Results**

From a psychometric perspective, exploratory and confirmatory factor analyses of the Inventory of School Motivation and the Inventory of School Motivation Revised have offered considerable empirical support for the validity and utility of the Inventory of School Motivation in cross cultural

contexts (reported in McInerney, 1995; McInerney & Swisher, 1995; McInerney, McInerney & Roche, 1995; McInerney & Sinclair, 1991, 1992; McInerney, Roche, McInerney & Marsh, 1997; McInerney & Yeung, 2000). Table 1 presents the reliability estimates on each scale for the Aboriginal and non-Aboriginal groups as well as the descriptive statistics.

**Table 1.** Descriptive statistics , reliability estimates and significant differences (MANOVA) on scales and outcome measures for Aboriginal and non-Aboriginal groups.

| | Aboriginal | | Non-Aboriginal | | | |
|---|---|---|---|---|---|---|
| Variable | Mean | Std Dev | Mean | Std Dev | p (1,898) | D.F. |
| TASKEFFORT | 4.09(.82) | .59 | 4.12(.83) | .55 | .983 | |
| PRAISE | 3.65(.77) | .66 | 3.47(.82) | .70 | .001 | |
| EXTRINSIC | 3.74(.83) | .73 | 3.46(.83) | .73 | .000 | |
| COMPETITIVE | 3.32(.81) | .83 | 3.14(.85) | .87 | .007 | |
| SOCIALSTATUS | 3.00(.84) | .92 | 3.14(.84) | .87 | .001 | |
| AFFILIATION(a) | 3.40(.50) | .54 | 3.37(.65) | .62 | .548 | |
| SOCIALCONCERN | 3.71(.60) | .68 | 3.74(.64) | .65 | .994 | |
| MASTERYGENERAL | 4.02(.76) | .68 | 3.98(.71) | .62 | .381 | |
| PERFORMGENERAL | 3.41(.79) | .74 | 3.22(.80) | .73 | .001 | |
| SOCIALGENERAL | 3.69(.66) | .71 | 3.55(.74) | 74 | .014 | |
| GLOBMOTIVATE | 3.76(.77) | .67 | 3.73(.80) | .61 | .190 | |
| AFFILIATION(b) | 3.59(.84) | .79 | 3.38(.77) | .71 | .000 | |
| ENGSC | 3.50(.88) | .92 | 3.42(.86) | .80 | .623 | |
| MATHSC | 3.30(.93) | 1.10 | 3.28(.91) | .98 | .914 | |
| GENSC1 | 3.69(.73) | .73 | 3.56(.79) | .70 | .124 | |
| SELFRELIANCE | 3.38(.59) | .45 | 3.47(.62) | .45 | .053 | |
| SELFESTEEM | 3.22(.61) | .51 | 3.41(.74) | .54 | .000 | |
| SENSEPURPOSE | 4.21(.84) | .70 | 4.32(.83) | .61 | .169 | |
| FURTHED | 3.57(.87) | .95 | 3.74(.91) | .96 | .055 | |
| AFFECT | 3.26(.58) | 1.10 | 3.09(.73) | 1.13 | .014 | |
| VALUE | 4.26(.77) | .56 | 4.24(.80) | .59 | .645 | |

Note: The coefficient in brackets after each mean score is coefficient alpha for each of the scales.

Because each of the scales was self report and therefore potentially inter-related multivariate analysis of variance, with all variables entered in the one procedure, was utilized, with cultural background (Aboriginal and non-Aboriginal) as the independent variable. Bartlett-Box test indicated that across all scales there was homogeneity of variance (the exception being English self-concept). It is accepted that the use of multivariate analysis of variance is a conservative measure of true significant differences. The multivariate test of significance showed significance differences across a range of scales (F=3.72, df=22,877). However, despite the significance, differences were of little practical significance and effect sizes small. Nevertheless, I report these below as they are informative regarding similarities and differences between the groups, and in particular, highlights the fact that the similarities far outweigh the differences across the broad spectrum of scales measured in this study.

Follow-up univariate F-tests (df=1,898) indicated significant differences on the following individual oriented scales: Praise (F=10.819), Extrinsic (F=25.305), Competition (F=7.271), Social Status (F=11.925), and Performance General (F=11.599). Contrary to hypothesized differences the Aboriginal group was stronger on each of these individual oriented scales. There were no significant

differences in Task-Effort, Mastery General and Global Motivation. Means and standard deviations for each of these scales are presented in Table 1.

Contrary to expectations there were no significant differences between the two groups on the following social oriented scales: Affiliation (a) and Social Concern. There were, however, significant differences on Affiliation (b) (F=12.787) and Social General (F=6.100). In both of the latter cases the findings supported the hypotheses, i.e., the Aboriginal participants were significantly more socially oriented than the non-Aboriginal participants. Means and standard deviations for each of these scales are presented in Table 1.

Contrary to expectations there were no significant differences between the two groups on any of the three self-concept scales, namely, English Self Concept, Maths Self Concept or General Academic Self Concept. There was, however, a significant difference on the sense of self scales. Supporting the hypotheses proposed Aboriginal participants had a significantly lower self-esteem (F=14.088) than the non-Aboriginal participants. Although non-significant, the Aboriginal participants had a weaker sense of purpose for education, and a lower self reliance than the non-Aboriginal participants. This latter result approached significance (p=.053)

Contrary to expectations Aboriginal participants liked school more than their non-Aboriginal peers (F=6.058). Contrary to the hypothesis, there was no significant differences between the two groups on valuing education. There was some support for the hypothesis that non-Aboriginal students would be higher on desiring further education with differences between the groups approaching significance (p=.055).

**Table 2 Summary of significant positive and negative predictors across Aboriginal and non-Aboriginal groups on valued academic outcomes**

| | Significant predictors | | | | | |
|---|---|---|---|---|---|---|
| | Furthered | | Value | | Affect | |
| | NonAb | Ab | NonAb | Ab | NonAb | Ab |
| **Variable** | | | | | | |
| **Motivation orientation** | | | | | | |
| Taskeffort | + | + | + | + | + | + |
| Praise | | | | | | + |
| Extrinsic | - | - | | | + | - |
| Competition | | | + | | + | |
| Social status | - | | - | | | |
| Affiliation | - | - | - | | - | - |
| Social concern | + | - | | | + | |
| **Sense of Self** | | | | | | |
| Self reliance | + | + | | | + | |
| Self-esteem | + | | | | + | |
| Sense of purpose | + | + | + | + | + | + |
| **Self concept** | | | | | | |
| English self concept | + | + | + | | | + |
| Maths self concept | + | | + | | | + |
| General academic self con | + | | + | + | + | |

Note: + indicates a positive predictor, - indicates a negative predictor

In order to ascertain the importance of these variables to valued school outcomes a series of multiple regression analyses were conducted. Each of the sets of predictor variables, namely, motivational goal orientations, sense of self variables, and self-concept variables were entered as single sets into separate multiple regression analyses for each group with the following criterion variables: intention to complete further education, affect towards school, and valuing of schooling. These analyses were conducted separately for each group to evaluate the capacity of the variables to predict the outcome variables, the relative importance of each predictor variable to explaining variance in the outcome variables, and finally to examine differences in the patterns of significant predictor variables across the two groups. The comparisons referred to in the following sections are non-statistical but give the flavour of the differences and similarities in patterns across the two groups. A finding of significant positive or negative relationship for a particular variable for one group and a non-significant relationship for the second group does not mean that there are significant differences between the two groups as significance is effected by the number of participants in each group. For example, it would be possible for a smaller non-Aboriginal relationship to be significant, whereas a larger Aboriginal relationship to be non-significant. Given this caveat, the following results still tell an interesting tale regarding the strong similarities between the two groups across the scales.

For the total group the combined group of goal orientations was able to explain 23% of the intention to complete further education (p=.000). The significant predictors in order of significance based on standardised beta weights were task-effort, social concern, extrinsic (negative), affiliation (negative) and social status (negative). Praise and competition approached significance at the .05 level. For the Aboriginal group the combined group of goal orientations was able to explain 43% of the variance in intention to complete further education (p=.000). The first four predictors, namely, task-effort, social concern, extrinsic (negative) and affiliation (negative) were identical in importance to the full group. Praise, social status, and competition were non significant for the Aboriginal group.

For the criterion variable valuing education the combined group of goal orientations was able to explain 37.5% of the variance (p=.000). The significant predictors in order of significance were task-effort, competition, social status (negative), affiliation, and praise approached significance (.05). For the Aboriginal group this combination of variables was able to explain 40% of the variance (p=.000). However, in contrast to the full group only one predictor variable was significant, namely, task-effort.

Finally, for the criterion variable affect towards school the combined group of goal orientations were able to explain 30% of the variance for the full group (p=.000). The significant predictors in order of importance were task-effort, social concern, affiliation (negative), competition, and extrinsic. The same set of variables were able to explain 38% of the variance for the Aboriginal group with the significant predictors in order of importance, praise, task-effort, extrinsic (negative) and affiliation (negative).

In order to examine the relationship of the sense of self variables to the self-report outcome variables self reliance, self esteem and sense of purpose were entered as a single block into multiple regression analyses for each group with the dependent variables, affect, further education and valuing education. For affect to schooling this group of variables was able to explain 16% of the variance (p=.000) for the full group of participants with both sense of purpose and self esteem being significant predictors. For the Aboriginal group 14.4% (p=.000) of the variance was explained with the significant predictors being self reliance and sense of purpose. For the dependent variable intention to complete further education the sense of self variables were able to explain 30% of the variance (p=.000) with all predictor variables being significant in order: sense of purpose, self reliance and self esteem. For the Aboriginal group 29% of the variance was explained (p=.000) and the two significant predictors were sense of purpose and self reliance. Self esteem was not significant. For the last of the self-report outcome variables, valuing education, the sense of self variables were able to explain 49% of the variance for the full group with most of this being predicted by sense of purpose for education. For the

Aboriginal group this set of variables was also able to explain 40% of the variance with most of this being predicted by sense of purpose. In general, it can be seen that for both groups sense of purpose for education was a very important predictor of affect, further education and valuing education. Self esteem was important for the non-Aboriginal group, but not for the Aboriginal group. Self reliance also appears relatively more important for the Aboriginal group.

In order to examine whether academic self concept was related to these same three outcome measures English self-concept, maths self-concept and general academic self-concept were entered as a single block with the same dependent variables for each group. The three variables were able to explain a significant, but relatively low percentage of variance in affect (8.5%, p=.000) with both maths self concept and general academic self concept being significant predictors. These predictors were able to explain 16% of variance for the Aboriginal group (p=.000), however only maths self concept was significant, with general academic self concept approaching significance. These self-concept variables were able to explain 15.4% of the variance in further education (p=.000) with all three variables being significant predictors in order: general academic self concept, maths self concept and English self concept. These variables explained 19.7% of the variance for the Aboriginal group (p=.000), however, only English self concept was a significant predictor for this group. Finally, the three self concept variables were able to explain 13.7% of variance in valuing education for the full group with each of the predictor variables being significant in order of importance: general academic self concept, maths self concept and English self concept. These variables explained 16% of variance for the Aboriginal group (p=.000) with only general academic self concept being significant. It is apparent from these results that general academic self concept and maths self concept were consistently strong predictors for the full group. Although the level of variance explained was equivalent, the pattern for the Aboriginal group was more variable. For the Aboriginal group in each analysis only one predictor was significant and this was different for each dependent variable. This could be an artifact of the small sample size or problems associated with multicollinearity. In order to consider potential multicollinearity the biserial correlations between each set of predictors are presented in the appendix. For the motivation orientation scales there is low to moderately high correlations across the scales. Related scales, such as extrinsic and praise, are more highly correlated than non-related scales such as social concern and competition. With the sense of self scales there was a moderately high correlation across the scales, while there was a low correlation between maths and English self concept, with a moderately high correlation with general self concept. The level of correlation across particular scales should be taken into account when considering the results below

One could argue that the large explained variance in most of the above analyses is inflated because self-report predictor variables are regressed on self-report outcome variables. In order to give some credibility to the above findings the same sets of predictor variables were regressed on three 'objective' outcome measures, namely, number of days absence in the term prior to the survey, maths rankings and English rankings, either based on teacher assessment, or calculated from raw scores for schools that provided these. It is, however, recognised that much research has failed to demonstrate a convincing relationship between motivational measures such as those included in this study and measured outcomes such as grades and attendance. The reason for the lack of congruence of these measures is subject of current research.

For the full group of participants the set of motivational goals was not significantly related to school absence. This could be partly explained through schools implementing different policies and procedures recording absences. Indeed, some schools set ceilings on absences and then suspend the student – hence this causes difficulties in analyses. 6% (p=.000) of the variance in mathematics rank was explained by this group of variables with four predictors being significant, in order of importance social status (negative), affiliation (negative), competition, taskeffort and social concern. Finally, for English rank 8% of variance was explained (p=.000) with the significant predictors, in order of importance being taskeffort, affiliation (negative) extrinsic(negative) and social concern. For the

Aboriginal group 16% (p=.012) of the variance in absence was explained by the set of motivational goals with social concern (negative) being the only significant predictor. The set of motivational orientations was not significantly related to maths rank, however 14% (p=.04) of the variance in English rank was explained with no significant predictors emerging in the analysis.

For the full group of participants the three sense of self variables were able to explain a significant but small amount of variance in days absence with sense of purpose being the only significant predictor. The self-concept variables were not significantly related to days absence. For the Aboriginal group neither set of variables was significantly related to days absence.

For the full group 11% of the variance was explained in maths rank (p=.000) by the set of self-concept variables with maths self-concept being the significant predictor with general academic self-concept approaching significance. A smaller, but significant amount of variance was explained for English rank (3%, p=.000) with English self concept being the only significant predictor. These relationships, although not strong, are in the direction expected, that is that maths self-concept predicts maths rank and English self-concept predicts English rank. However, this group of variables was not significantly related to maths or English rank for the Aboriginal group. These results for the Aboriginal group were not surprising as there was a truncated set of ranks for this group for both mathematics and English with the preponderance of ranks being low.

For the full group the three sense of self variables were able to explain a small but significant amount of variance in math rank (7%, p=.000) with both self reliance and self esteem being significant predictors. 6% (p=.000) of the variance was explained for English rank with self reliance and self esteem again the significant predictors. The sense of self variables were able to explain 8% (p=.047) of the variance in math rank for the Aboriginal group with self esteem the only significant predictor. 16% (P=.000) of variance in English rank was explained by these variables with sense of purpose the only significant predictor.

## Discussion

What does all the above tell us about Aboriginal children and their motivation at school? The first and most important finding is that, across the broad range of scales used in this study, the similarities between the Aboriginal and non-Aboriginal groups far outweigh any differences. Furthermore, where significant differences occur they are of little practical significance, and are of degree rather than kind. In line with this finding, the second important finding is that the stereotypical view of Aboriginal children as non-individualistic is not tenable given the measures I have used in this study. Indeed, the Aboriginal students were significantly (albeit slightly) more competitive, extrinsically oriented, performance and social status oriented than the non-Aboriginal group. It should be noted here that these are differences in degree rather than kind of motivation, as indicated in Table 1. In other words, there was a pattern in the results in both groups towards agreement, rather than disagreement, with the scale items. These results might be explained in terms of response bias – that is, that the Aboriginal students had a predilection for answering "agree" more than the non-Aboriginal group. However, this explanation is not plausible in the context of the number of scales in which there were no significant differences, specifically on the affiliation, social concern, taskeffort, mastery general, and all the self concept scales. The social goals provide some support for the stereotypical view of Aboriginal students as more socially oriented with them being more affiliation (b) oriented and higher on social general than the non-Aboriginal group, however, there were no significant differences on affiliation (a) and social concern. There were no significant differences on the academic self concept scales, however on each of the sense of self scales the Aboriginal students were lower than the non-Aboriginal group, and significantly lower on the self esteem scale. Finally, the Aboriginal group were significantly higher on affect to school, and there were no differences in valuing school or desiring further education.

These results suggest first, that Aboriginal students are more or less motivated by the same types of influences as the non-Aboriginal group – and indeed, appear more so on a number of key

variables. Second, the academic self concept of the Aboriginal students is equal to that of the other students. This is in contrast to a number of other studies which suggest that the self-concept of minorities is, paradoxically, higher than that of the mainstream group despite poorer school performance. Finally, even on the sense of self variables, the similarities were strong, although the Aboriginal group was weaker on each scale.

An analysis of differences gives us only part of the story. In order to obtain some clearer understanding of the forces that partially shape Aboriginal motivation and achievement in school settings we need to also consider the results of the multiple regression analyses. Table 2 provides a telling story. The most prominent motivational orientation across the two groups was taskeffort. For each outcome variable this was a positive predictor of the valued academic outcomes. There was no significant difference on this motivator for the two groups. In other words, the single most important motivator was common to the two groups. Secondly, affiliation (a) was a consistent predictor for both groups, and most importantly was negatively related to each criterion variable for each group. In other words, to the extent either the Aboriginal or full group indicate a lack of relevance of working to preserve group solidarity, they performed better. There was not the expected difference between the two groups based on some notional individualistic/collectivist separation. Indeed, across the range of motivational orientation variables the similarities far outweigh any differences.

A similar pattern emerged with the sense of self variables. In this case the most consistent predictor of the valued outcomes was sense of purpose and there was no difference between the two groups on this.

Finally, while the three self concept scales were significant predictors for the non-Aboriginal group, there was not a consistent pattern for the Aboriginal group. However, self concept was positively related to the valued outcomes in every case.

Some credibility is given to these results by the evidence that the same sets of predictors relate to "objective" outcomes such as absenteeism, and maths and English ranks, although the level of prediction as measured by multiple R is considerably less. This is not unexpected as a number of studies have shown a relatively low level of relationship between measures such as those used in this study and similar outcomes leading many researchers to speculate on the reason for this weak relationship. In this particular study it was difficult to obtain strong results against the objective measures owing, in particular, to the truncated range of scores for the Aboriginal group on each of these measures. In order to examine this further the study has been extended to a number of other schools having large numbers of Aboriginal students where it might be expected that the range of achievement and attendance measures might be wider.

It would appear from these results that Aboriginal children, even in remote locations, are motivated by the same motives and self beliefs as influence children from non-Aboriginal and largely urban backgrounds. These results tell a positive story regarding the capacity of Aboriginal children to do well at school given the right sort of motivational school environment. However, the results beg the question of what causes are implicated in the relatively poor academic performance and retention of Aboriginal children in the light of these findings. Further research will need to move on to a different plane in order to examine this issue.

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Bivariate correlations between sense of self scales

- - Correlation Coefficients - -

| | SR | SE | SOP |
|---|---|---|---|
| SR | 1.0000 | .6372 | .4339 |
| | P= . | P= .000 | P= .000 |
| SE | .6372 | 1.0000 | .4005 |
| | P= .000 | P= . | P= .000 |
| SOP | .4339 | .4005 | 1.0000 |
| | P= .000 | P= .000 | P= . |

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Bivariate correlations between self concept scales

- - Correlation Coefficients - -

| | ENGSC | MATHSC | GENSC1 |
|---|---|---|---|
| ENGSC | 1.0000 | .1435 | .5736 |
| | P= . | P= .000 | P= .000 |
| MATHSC | .1435 | 1.0000 | .3993 |
| | P= .000 | P= . | P= .000 |
| GENSC1 | .5736 | .3993 | 1.0000 |
| | P= .000 | P= .000 | P= . |

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

Bivariate correlations between motivation orientation scales.

- - Correlation Coefficients - -

| | TASKEFF | PRAISE | EXTRINSIC | COMPET | SOSTATUS | AFFIL | SOCIAL |
|---|---|---|---|---|---|---|---|
| TASKEFF | 1.0000 | .5170 | .4166 | .2920 | .1895 | -.0145 | .5206 |
| | P= . | P= .000 | P= .000 | P= .000 | P= .000 | P= .657 | p=.000 |
| PRAISE | .5170 | 1.0000 | .6981 | .5164 | .5954 | .1555 | .3917 |
| | P= .000 | P= . | P= .000 | P= .000 | P= .000 | P= .000 | p=.000 |
| EXTRINSIC | .4166 | .6981 | 1.0000 | .5976 | .5883 | .1582 | .2774 |
| | P= .000 | P= .000 | P= . | P= .000 | P= .000 | P= .000 | p=.000 |
| COMPET | .2920 | .5164 | .5976 | 1.0000 | .6799 | .0526 | .0885 |
| | P= .000 | P= .000 | P= .000 | P= . | P= .000 | P= .108 | p=.007 |
| SOSTATUS | .1895 | .5954 | .5883 | .6799 | 1.0000 | .1233 | .1930 |
| | P= .000 | P= .000 | P= .000 | P= .000 | P= . | P= .000 | p=.000 |
| AFFIL | -.0145 | .1555 | .1582 | .0526 | .1233 | 1.0000 | .1284 |
| | P= .657 | P= .000 | P= .000 | P= .108 | P= .000 | P= . | p=.000 |
| SOCIAL | .5206 | .3917 | .2774 | .0885 | .1930 | .1284 | 1.000 |
| | P= .000 | P= .000 | P= .000 | P= .007 | P= .000 | P= .000 | p= . |

(Coefficient / (Cases) / 2-tailed Significance)

" . " is printed if a coefficient cannot be computed

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