

Examining the Valuing of Schooling as a Motivational Indicator of American Indian Students: Perspectives Based on a Model of Future Oriented Motivation and Self-Regulation

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There is an extensive research history related to understanding how educational institutions can better serve the American Indian student. However, there is little research on how the sociocultural context shapes perceptions of the future and impacts student achievement. This study investigates how the sociocultural context of home and school influences the perceived importance of an education to the future and how these perceptions are related to the present goals that the American Indian student pursues in the classroom, thus affecting achievement. The results of the study are interpreted in the context of a theoretical model (Miller & Brickman, 2004) and suggest that successful American Indian students desire to learn for the sake of understanding and are willing to put forth effort to do so. Additionally, multiple regression analyses revealed that specific types of present goals predicted valuing of school for the future, their intentions to further their education and GPA. Implications for practice based upon the results of this study and the model suggest interventions that can be implemented by teachers and parents.

The purpose of this study is to examine how sociocultural support, future goals, instrumentality, present motivational goals and self-concepts of ability relate to the valuing of school for a group of American Indian students. Miller and Brickman (2004) have postulated a theoretical model that depicts future goals, such as getting an education, getting a job and having a family as impacting present school motivation. Clearly, these future goals have maintained individuals, cultures and societies. They are social developmental

expectations that are relevant across cultures and are shaped by knowledge transmitted at home and school. The model shows how as students progress through school they use their sociocultural knowledge about future goals to help determine what is important to do in the present in order to successfully reach the future. Students self-regulate their effort, monitor their school performance, and evaluate their success or failure. Their perceptions of success and failure shapes their self-concept, which further contributes to the present motivational goals they continue to choose for present classroom work. Quite simply, the Miller and Brickman model suggests that goals for present school tasks is a reflection of what the student has come to believe as instrumental to accomplish in the present to reach the future, and in turn, shapes students' affect about school, valuing school for the future and their motivational intentions to continue.

Future goals have been found to be similar across cultures, including those of American Indians (Brickman, 1998; Brickman & Miller, 2001; McInerney & Swisher, 1995). Additionally, present goal choice has been found to be more similar across cultures than different, indicating students across cultures can have similar knowledge and experiences and choose similar type goals for present school work (McInerney, 2008; McInerney, Hinkley, Dowson, & Van Etten, 1998; McInerney, Roche, McInerney, & Marsh, 1997). There are a variety of reasons, or goals, both short and long term, social and academic for which students engage in present academic work. The Model of Future Oriented Motivation and Self-Regulation allows us to explore how experiences at home and school might help explain why some American Indian students choose goals that help them thrive at school and others do not.

We will first briefly discuss aspects of the Model of Future Oriented Motivation and Self-Regulation (Brickman & Miller, 2001; Miller & Brickman, 2004) in relationship to how the sociocultural context shapes the valuing of school, self-concept and present goal choice. Then we will discuss the psychometric measures used in this study to assess students' present goal choice, perceived instrumentality of school, self-concept and facilitating factors, such as parents, teachers and peers. This study addresses four questions: 1) What present classroom goals are most important to the American Indian student in this setting? 2) What present classroom goals and sense of self (perceptions of the instrumentality of school and self-regulatory processes) best predict valuing of schooling, intentions to attend a university, positive affect toward schooling, and GPA? 3) What types of social facilitating factors such as parents, teachers and peers predict valuing of school, intentions to attend a university, and affect toward schooling and GPA? 4) Does the valuing of school and sense of purpose for schooling (instrumentality), intentions to attend a university, and affect toward schooling predict GPA?

Model of Future Oriented Motivation and Self-Regulation: Valuing of School for the Future

Research (Brickman & Miller, 2001; Nurmi, 1991) suggests that across cultures people pursue similar life tasks, such as, getting an education, getting a job and having a family. The sociocultural context, including parents, teachers and peers, transmits important knowledge about these future goals, plus general problem solving strategies to interpret events important to reaching them. Therefore, family, peers and teachers influence a students' perceptions of what, how and why certain things are important and worthy of pursuit. Based on this knowledge, and the interpretive rules, the student assigns importance and meaning to an education and how it is to be pursued (Cantor & Kilstrom, 1987; Scholnick & Friedman, 1987). Meaning and value of future goals, such as furthering one's education or getting a job, sets the stage for the development of a system of subgoals that serve as proximal guides and self-motivators for courses of action that lead to more distant goals. Research (Brickman & Miller, 2001) has found that students report pursuit of their future goals in a similar sequence, first, getting an education, then a job, then establishing a family. Therefore, the subgoal of getting an education is a primary focus upon which one evaluates the course of action he/she will follow to reach more distant future goals.

An integration of theories on future goals (Nurmi, 1991) and social-cognitive theories (Cantor & Kilstrom, 1987) suggests that the value of getting an education is often based upon others' actions and the inferences drawn about what motivated others to pursue an education. Students infer how others like them have succeeded or failed in completing school. Students also identify that personal qualities are important to getting an education and a job, such as skills and abilities in subject content areas. The cognitive representations of cause and effect relationships learned within the social context and the comparison of the self with similar others' intentions therefore give meaning and value to education as a subgoal for the future. For students to be motivated by their daily tasks and self-regulate their effort in their pursuit of an education they must see that present tasks are instrumental to completing an education that will enable them to pursue other important future goals, such a getting a job.

As students progress through the socialization of school, they continuously acquire information from parents, teachers and peers. Students choose present goals that have acquired meaning and value based in part upon comparison to others and feedback from significant others. They monitor, evaluate performance and experience, affective reactions and choose present tasks that they perceive are instrumental for progressing toward completing an education (subgoal to the future). In this study we measure perceived parental, teacher and peer influence on valuing of school by using the *Facilitating Factors Questionnaire* (McInerney, Yeung & Dowson, 2005).

Present Goal Choice, Perceptions of Instrumentality and Self-Regulation

“Instrumentality” refers to the perceived relationship between the present task, the subgoal, and the future. There are numerous research studies supporting the role of perceived instrumentality and its relationship to self-regulation and strategy use (Brickman & Miller, 1998; DeVolder & Lens, 1982; Raynor, 1970; Steinberg, Dornbusch & Brown, 1992). For students to be motivated by their daily tasks and self-regulate their effort in the pursuit of an education they must see that present tasks are instrumental to completing an education that will enable them to pursue other important future goals, such as getting a job.

The Miller and Brickman model depicts perceived “instrumentality” as initiating forethought and planning of present goals. There have been numerous research studies investigating the multiple social and academic goals for which students engage in their present classroom work, and how those goals influence a student’s engagement in school tasks (Ames, 1992; Ames & Ames, 1984; Ames & Archer, 1988; Dowson & McInerney, 2001, 2003; Dweck & Leggett, 1988; Maehr & Braskamp, 1986; Pintrich & Garcia, 1991; see also McInerney & Van Etten, 2004). The goals are typically referred to as task (learning), performance and social goals (Elliot, 2005; Elliot, Shell, Henry & Maier 2005; Kaplan & Maehr, 2007). Task goals represent the student as motivated to learn in order to become more competent. Task goals have been found to have a positive relationship with self-regulation, effort and persistence. Performance goals represent the student as working to look good, or avoid looking bad, academically or socially (Dowson & McInerney, 2001). Qualitative research by Brickman, (1998) found that students who have experienced repeated failure will report that they don’t complete home work or study for exams because it is better to say one has not studied rather than look unintelligent. Other students report that they study to overachieve to ensure that they appear smarter than others, or to be the best in the class to gain teacher approval.

In addition to learning and performance goals, students have been found to do their school work in order to comply, be socially responsible, please others, such as parents, teachers and peers, and to do their work to stay eligible for extra curricular activities. These more immediate social task goals were also found to make varying contributions to self-regulation, effort and persistence (Dowson & McInerney, 2001, 2003; Miller, Greene, Montalvo, Ravindran & Nichols, 1996; Van Etten, Pressley, McInerney & Liem, 2008; Wentzel, 1991).

Although there has been an abundance of research on present classroom goals there is little research on the present goals American Indian students pursue or their perceptions of instrumentality of school for the future. This relationship is vitally important for the proximal self-regulation processes of self-monitoring, evaluation and self-reaction of present tasks. Present tasks define the standards for the immediate performance, which is monitored and evaluated. The self-evaluative aspect of self-regulation is a critical source of continuing motivation due to its

relationship to self-reaction (affect toward school) which, if positive, strengthens self-concepts of ability, and if negative, weakens self-concepts of ability (Schunk, 2005; Schunk & Zimmerman, 2007; Zimmerman, 2008).

In this study we measured motivational goals, perceptions of instrumentality and self-regulatory processes using the *Inventory of School Motivation* (McInerney & Ali, 2006; McInerney, Marsh & Yeung, 2003; McInerney & Sinclair, 1991; McInerney, Yeung & McInerney, 2001; Watkins, McInerney, Akande & Lee, 2003; Watkins, McInerney & Boholst, 2003).

Self-Efficacy for School Subjects, Self-Concept and Affect Toward Schooling

Theories focused on understanding school motivation suggest that repeated success on school tasks results in a positive affect that one is progressing forward and in turn reinforces the types of immediate goals a student continues to be motivated to choose for classroom work. It is through the process of evaluation within the self-regulatory process that positive affect associated with success enhances subject domain self-efficacy, thus enhancing achievement and continued motivation to pursue similar goals on school tasks. The relationship of self-efficacy to task, performance and social responsibility goals are well established in educational research. Task goals have consistently been found to have a positive relationship with self-efficacy and achievement. The two dimensions of performance goals, both academic and social, have varying effects on self-efficacy. When self-efficacy is high, performance goals can aid in self-regulation, effort and persistence, when self-efficacy is low it can have a negative impact on self-regulation and achievement.

The model assumes that a positive affect during the self-regulatory process of evaluation of how well one is doing on present tasks influences the student's general self confidence, which adds to the enhancement of continued motivation. This is consistent with Bandura's (1986, 2001, 2008) theory that emphasizes the importance of a larger self-regulatory system that sustains motivation. A continued line of research suggests that an individual's self concept is related to a student's overall adjustment, satisfaction and achievement in school (Marsh & Craven, 1997; Marsh, Craven & McInerney, 2003, 2005, 2008). It is also widely accepted that academic achievement is more strongly related to academic self-concept than to non-academic and general components of self-concept. In general, research indicates that specific academic self concepts, such as Mathematics and Verbal are strongly correlated to their respective academic achievements, but are nearly uncorrelated with each other. In contrast, academic achievement in various areas is moderately to highly correlated (Marsh, 1992). This suggests that the general self-concept of abilities represented in the model is a culmination of abilities, both social and academic, which likely includes an overall general perception of ability to reach expected life goals and serves continued motivation. In order to examine the nature and importance of self concept to the American Indian students participating in this study three academic self-concept scales,

drawn from Marsh's ASDQ (Marsh, 1992) were included, viz, English Self Concept, Maths Self-Concept and General Academic Self-Concept.

In this study we survey perceptions of sociocultural support, the present classroom goals and perceptions of self-concept of American Indian students at a boarding school to examine what predicts their sense of purpose and valuing for schooling (the belief that schooling will be of help to them to get ahead in life), their affect toward school and their intentions to further their education. In the next section we will discuss the instruments used. Then we will discuss the results within the framework of the Model of Future Oriented Motivation and Self-Regulation.

Method

Participants

This study was conducted at a K-12 boarding school located within a specific Tribal Nation in the Midwest United States. The school is 100% American Indian representing 17 different Tribal Nations. There were 98 males and 105 females in the 8th through 12th grade who were given permission to participate in the study. The average age of the participants was 16 years. This school provides a weekly opportunity for family visitors, and if distance allows, students can go to their family's home on week-ends. The school reports that all students typically go home for holidays and semester breaks.

Instruments

Three instruments were used in this study: (a) the *Inventory of School Motivation* (ISM), (b) the *Facilitating Conditions Questionnaire* (FCQ), and (c) the *Academic Self-description Questionnaire* (ASDQ). Each of these instruments has been used in cross cultural research and each has strong psychometric properties (see, for example, Marsh, 1990, 1992, 1993; Marsh & Craven, 1997; McInerney & Ali, 2006; McInerney, Marsh & Yeung, 2003; McInerney, Yeung & McInerney, 2000; Watkins, McInerney & Boholst, 2003).

The *Inventory of School Motivation* (ISM). The Inventory of School Motivation (ISM) consists of 43 items comprising twelve scales relating to the following motivational goals and sense of self values influencing learning:

Task: (4 items) Measures the student's interest in the task of learning and wanting to improve understanding. Examples of this dimension are "I like to see that I am improving in my schoolwork" and "I try harder with interesting schoolwork."

Effort: (7 items) Measures the willingness of students to expend effort to improve schoolwork. Examples of this dimension are "When I am improving in my schoolwork I try even harder" and "I am always trying to do better in my schoolwork."

Competition: (6 items) Measures a student's competitiveness in learning. Examples of this dimension are "I like to compete with others at school" and "I work harder if I am trying to be better than others."

Social Power: (6 items) Measures the degree to which seeking social power and status through school work is important to a student. Examples of this dimension are “I work hard at school to be put in charge of a group” and “I work hard at school because I want the class notice me.”

Affiliation: (3 items) Measures the student’s interest in 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 prefer to work with other people at school rather than work alone.”

Social Concern: (5 items) Measures the student’s concern for other students and a willingness to help them with their school work. Examples of this dimension are “It is very important for students to help each other at school” and “I like to help other students do well at school.”

Praise: (5 items) Measures the degree to which praise and recognition for schoolwork is important to a student. Examples of this dimension are “At school I work best when I am praised” and “I want to be praised for my good schoolwork.”

Token: (7) Measures the degree to which tangible rewards for schoolwork are important to a student. Examples of this dimension are “I work best in class when I get some kind of rewards” and “I work hard in school for rewards from the teacher.”

The Inventory also measures four Sense of Self scales, which refer to the more or less organized collections of perceptions, beliefs, and feelings related to who one is in the school context: Sense of purpose in this study relates to the measure of “*instrumentality*” in the Miller and Brickman Model. The Self-Reliance, Negative and Positive Self-esteem measures align with “*self-regulatory processes*” in the Model. Self-regulation consists of three processes, monitoring one’s effort (i.e., self-reliance), evaluating performance against self or others and associated reactions (i.e., negative and positive self-esteem and feelings). The nature of the scales is described below.

Sense of purpose (instrumentality): (6 items) Measures the degree to which a student perceives school performance as instrumental for the future. Examples of this dimension are “I aim my schooling towards getting a good job” and “I want to do well at school to have a good future.”

Self reliance (self-monitoring): (8 items) Measures a student’s self-reliance to monitor the amount or level of effort needed to work at school. Examples of this dimension are “I often try new things on my own” and “I don’t need anyone to tell me to work hard at school.”

Negative self-esteem (self-evaluation and negative affect): (7 items) Measures a student’s negative feelings about their general academic ability at school. Examples of this dimension are “I often worry that I am not very good at school” and “I often think that there are things I can’t do at school.”

Positive self-esteem (self-evaluation and positive affect): (5 items) Measures a student’s positive feelings about their general academic ability at

school. Examples of this dimension are “I succeed at whatever I do at school” and “I think I’m as good as everybody else at school.”

Facilitating Conditions Questionnaire (FCQ). The *Facilitating Conditions Questionnaire* consists of 55 questions about eight background variables clustered around parent, peer and teacher influences that are believed to facilitate or inhibit the performance of students at school. The questions that refer to teachers, parents and peers serve as the impact of the sociocultural context as represented in the Model. Additionally, the intention to complete a degree at a university serves as a measure of the future goal of furthering one’s education, and valuing of schooling is the perceived subgoal for completing an education.

Intention to complete university (Future goal): (5 items) Measures a student’s intention to complete further education. Examples of this dimension are “I intend to go on to college or university.”

Valuing schooling (subgoal to the future): (9 items) Measures the degree a student values education. Examples of this dimension are “Education is important for me to get a job.”

Positive parent support (6 items) Measures a student’s perception of positive parental support. Examples of this dimension are “My mother helps me with my schoolwork.”

Positive teacher support (6 items) Measures a student’s perception of positive teacher support. Examples of this dimension are “My teachers help me with my schoolwork.”

Positive peer influence (5 items) Measures a student’s perception of positive peer influence. Examples of this dimension are “My friends help me with my schoolwork.”

Parental influence for leaving school (4 items) Measures a student’s perception of influences on leaving school. Examples of this dimension are “My mother doesn’t mind if I leave school when I want to.”

Pride from others (4 items) Measures the importance to a student of parental pride in their school achievements. Examples of this dimension are “It’s important for my father to be proud of my schoolwork.”

Negative parent influence (5 items) Measures a student’s perception of negative parental support. Examples of this dimension are “My father doesn’t pay any attention when I bring home report cards.”

Positive affect to school (3 items) Measures the degree to which a student appears to like school. Examples of this dimension are “I like studying.”

Negative peer influence (4 items) Measures a student’s perception of negative peer support. Examples of this dimension are “Some of my friends tell me I should leave school when I can.”

Positive peer valuing of school (4 items) Measures the degree a student perceives their peers value school. Examples of this dimension are “Most of my friends want to do well at school.”

Academic Self-description Questionnaire (ASDQ). Academic self-concepts are concerned with how students see their abilities generally, and specifically in

terms of English and Mathematics. Items were selected from Marsh's ASDQ (1992) instrument namely:

English self-concept (5 items) Students self-conceptions 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 (5 items) Students self-conceptions of their mathematics abilities. Examples of this dimension are "I have always done well in mathematics" and "I learn things quickly in mathematics."

General academic self-concept (5 items) Self-conceptions regarding student's overall abilities. Examples of this dimension are "I get good marks in most school subjects" and "I learn things quickly in most school subjects."

Dependent variables

Four dependent variables were used in the analyses to examine the relative strength of the predictor variables in explaining school achievement for these American Indian students. These dependent variables were three self-report measures drawn from the FCQ: Intention to complete university, Positive affect to school, Valuing schooling, and one objective measure, Grade Point Average (GPA). These dependent variables were chosen based on the theoretical model that integrated two theories, which have ample evidence of support, social cognitive theory (positive affect and valuing school influencing motivation) and future orientation (intention to complete university).

Students responded to the items in each instrument on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Descriptives and reliability estimates on each of these scales are presented in Table 1.

Statistical analyses

For purposes of this research, descriptive analyses on all variables were computed. Means were used for interpretation for two reasons, 1) for these types of instruments they are the best measure of central tendency, and 2) these instruments have been validated across cultures. Due to the reliability and validity of these measures across numerous cultures, low, average and high interpretations were based on a scale from 1 to 5. Multiple regression analyses were used to examine the relationships between the independent variables and dependent variables.

Table 1
Mean and Standard Deviations on Scales and Outcome Measures for School

| Scales | Mean | Std. Deviation | Reliability |
|---------------------------|------|----------------|-------------|
| ISM | | | |
| Task | 4.14 | 0.71 | 0.79 |
| Effort | 3.84 | 0.72 | 0.82 |
| Competition | 3.06 | 0.78 | 0.75 |
| Social Power | 2.91 | 0.84 | 0.81 |
| Affiliation | 3.44 | 0.86 | 0.68 |
| Social Concern | 3.57 | 0.68 | 0.61 |
| Praise | 3.41 | 0.73 | 0.71 |
| Token | 3.17 | 0.73 | 0.76 |
| Sense of Self | | | |
| Sense of Purpose | 4.01 | 0.74 | 0.82 |
| Sense of Reliance | 3.74 | 0.56 | 0.67 |
| Negative Self Esteem | 2.96 | 0.62 | 0.59 |
| Positive Self Esteem | 3.67 | 0.69 | 0.69 |
| FCQ | | | |
| Unint * | 4.04 | 0.85 | 0.88 |
| Svalue * | 4.17 | 0.65 | 0.84 |
| Psupp | 3.26 | 0.93 | 0.84 |
| Tsupp | 3.74 | 0.73 | 0.78 |
| Pinfl | 3.35 | 0.81 | 0.78 |
| Lschl | 2.01 | 0.89 | 0.78 |
| Prdoth | 3.69 | 0.89 | 0.79 |
| Nprnt | 2.19 | 0.89 | 0.79 |
| Afsch * | 3.33 | 0.87 | 0.67 |
| Npeer | 2.88 | 0.79 | 0.57 |
| Ppeerval | 3.71 | 0.73 | 0.75 |
| ASDQ | | | |
| English | 3.35 | 0.93 | 0.91 |
| Mathematics | 3.28 | 1.03 | 0.93 |
| General | 3.61 | 0.80 | 0.88 |
| Criterion Variable | | | |
| GPA | 2.72 | 0.62 | |

Note: Unint = Intention to complete university; Svalue = Valuing schooling; Psupp = Positive parent support; Tsupp = Positive teacher support; Pinfl = Positive peer influence; Lschl = Leaving school; Prdoth = Pride from others; Nprnt = Negative parental influence; Afsch = Positive affect to school; Npeer = Negative peer influence; Ppeerval = Positive peer valuing.

* These variables were used as outcome variables in a number of analyses.

Results and Discussion

Inventory of School Motivation. Students were high on task, effort and social concern oriented (> 3.5). Students were moderately high on competition, affiliation, praise and token (> 3). Students did not endorse social power as a motivator (< 3.0).

Motivation Profile for ISM

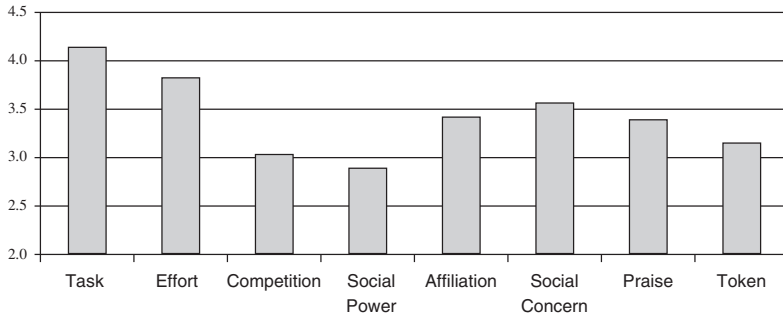


Figure 1. Mean scores for the students on each of the eight motivational scales drawn from the Inventory of School Motivation

Sense of Self. Students had a strong sense of purpose (instrumentality) for their school work (4) and a strong sense to monitor their effort (3.74). Students had low negative self esteem (2.96) and relatively high positive self esteem (3.67) within the school setting and generally monitor themselves in a positive light).

Sense of Self Scale (Instrumentality)

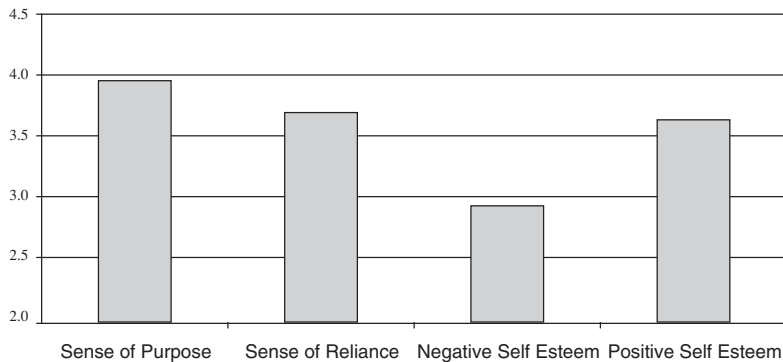


Figure 2. Mean scores for students on each of the four sense of self scales

Facilitating Conditions Questionnaire. Students strongly endorsed the value of going on to a university, the value of schooling, teacher support, pride from others, and positive peer influence (>3). Students moderately endorsed the importance of positive parent and peer support as well as positive affect to school (>3). Students were low on leaving school (2.0), negative parent support (2.2) and negative peer support (2.19) and negative peer influence (2.88).

Facilitating Conditions Questionnaire

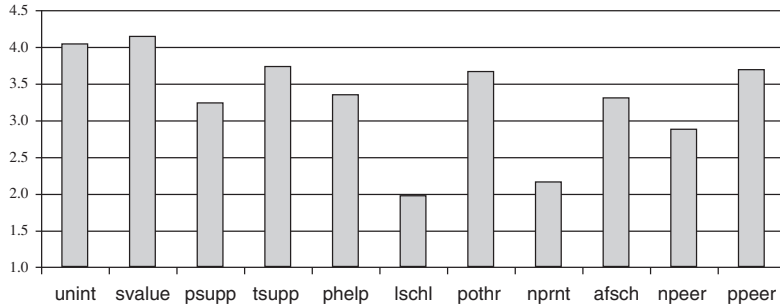


Figure 3. Mean performance of the students on the eleven facilitating conditions scales

Note: Unint = Intention to complete university; Svalue = Valuing schooling; Psupp = Positive parent support; Tsupp = Positive teacher support; Pinfl = Positive peer influence; Lschl = Leaving school; Prdth = Pride from others; Nprnt = Negative parental influence; Afsch = Positive affect to school; Npeer = Negative peer influence; Ppeerval = Positive peer valuing.

Academic Self Description Questionnaire. There was moderate endorsement of the three ASDQ scales of the students (>3). The students were stronger in their general academic self-concept.

Self Concept Scales

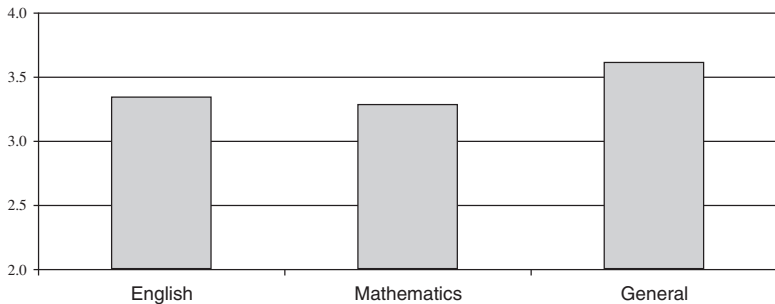


Figure 4. Mean performance of students on the three academic self concept scales

In summary, the descriptive statistics indicate that students in this study value learning to gain competence and are willing to put forth effort. When monitoring their performance they, on average, experience positive feelings about themselves, however, their overall self-concepts are stronger than their English and Math self-concepts. Teachers and peers appear to be more influential in the sociocultural context than parents. However, parents were not seen as a negative influence.

In order to ascertain whether there were differences in patterns of prediction of the various motivational and self-concept scales used in this study a series of multiple regression analyses were conducted. Table 2 presents the results of the regression analyses using the three self-report outcome measures taken from the *Facilitating Conditions Questionnaire* regressed on the ISM, Sense of Self, and ASDQ scales. A quick glance at the table indicates that across three outcome measures a significant amount of variance was explained for the students, ranging from 23% to 47%.

Inventory of School Motivation: The eight ISM scales were able to explain from 27% to 46% of variance in the three outcome measures. Of the eight ISM variables effort was a strong positive predictor for university intention, valuing school, and positive affect to school. Task was a positive predictor for university intention and valuing school, but a negative predictor of positive affect to school. None of the other ISM variables contributed significantly to predicting the self-report outcomes.

Sense of Self (Instrumentality). These four subscales of the ISM were able to explain a high level of variance in the three self report outcome measures ranging from 28% to 42%. Sense of purpose (instrumentality) was a positive predictor for the students' university intention, valuing school as a subgoal and positive affect to school. Sense of reliance (self-regulatory processes) was a positive predictor of valuing school, and positive affect to school, while both positive and negative self esteem were predictors of university intention. Clearly, as found in other research and depicted in the Model, instrumentality appears to link the present task to the subgoal of completing high school and the future goal of intentions to further one's education to get ahead in life. Additionally, these findings also support the theoretical predictions of the model in regard to self-regulation. Students who perceive the instrumentality of the present task, subgoal of high school and more distant goals experience a positive affect about school which helps maintain continued motivation.

Facilitating Conditions Questionnaire. Eight of the *Facilitating Conditions Questionnaire* scales were regressed on the three self-report outcome variables. Across the three outcomes 25% to 47% of the variance was explained. The most significant predictor across the three outcomes, university intention, school valuing and positive affect to school was teacher support. Praise from others and positive peer influence were significant positive predictors for university intention and valuing school. Teachers were a strong influence on students' valuing of education and the positive affect that is required for continued motivation. Also,

Table 2
Model Summary and Standardized Coefficients (Beta)
of Multiple Regressions on Valued Academic Outcomes

| SCALES | University Intention | School Valuing | Affect School |
|----------------------|----------------------------|----------------------------|----------------------------|
| ISM | R²=0.27* | R²=0.46* | R²=0.41* |
| Task | .254* | .241* | -.220* |
| Effort | .304* | .498* | .611* |
| Competition | .060 | .039 | -.091 |
| Social Power | .016 | -.113 | .131 |
| Affiliation | -.005 | -.081 | -.035 |
| Social Concern | .089 | .056 | .126 |
| Praise | -.150 | .026 | .136 |
| Token | -.002 | -.020 | -.069 |
| Sense of Self | R²=0.28* | R²=0.42* | R²=0.30* |
| Sense of Purpose | .190* | .408* | .221* |
| Sense of Reliance | .089 | .191* | .275* |
| Negative Self Esteem | -.125* | -.069 | -.030 |
| Positive Self Esteem | .269* | .090 | .096 |
| FCQ | R²=0.28* | R²=0.47* | R²=0.25* |
| Psupp | .001 | -.026 | -.123 |
| Tsupp | .181* | .367* | .406* |
| Phelp | -.038 | -.162* | .058 |
| Lschl | -.093 | -.070 | .066 |
| Pothr | .185* | .207* | -.001 |
| Nprnt | -.216* | -.273* | -.153 |
| Npeer | .050 | .062 | .034 |
| Ppeer | .153* | .186* | .145 |
| ASDQ | R²=0.23* | R²=0.25* | R²=0.24* |
| English | .103 | .024 | .111 |
| Mathematics | .064 | -.018 | -.003 |
| General Academic | .395* | .499* | .439* |

Note: * indicates a significant R² and significant predictor at <.05

Note: Unint = Intention to complete university; Svalue = Valuing schooling; Psupp = Positive parent support; Tsupp = Positive teacher support; Pinfl = Positive peer influence; Lschl = Leaving school; Prdth = Pride from others; Nprnt = Negative parental influence; Afsch = Positive affect to school; Npeer = Negative peer influence; Ppeerval = Positive peer valuing.

praise from others and peers help these students value education and perceive relevance to the future.

Academic Self Description Questionnaire. The three ASDQ scales explained from 23% to 25% of variance across the three scales. The predominant predictor for students' across the three outcome measures was general academic self-concept. The dominant message from this analysis indicates that level of general academic self-concept strongly predicts intention to go onto further education, how much students value school, and how much they like school.

Summary

A clear message emerges from these analyses using self-report outcome variables. The most salient predictors are consistent for the students, these being: Task, Effort, Sense of Purpose, and General Academic Self-concept. Facilitating factors that help shape meaningfulness and value for school work appear to be teachers and peers. Teachers and peers help students to see that it is important to become more competent and put forth effort. Teachers and peers also appear to be important to help students perceive the instrumentality of their school work for the future and provide feedback that develops positive perceptions of the self.

GPA

The objective outcome measure utilized in the study was GPA. It is not expected that the same level of variance will be explained in the multiple regression analyses using this outcome as there are many other influences affecting GPA that may have little to do with a student's motivation or self-concept, such as, type of instruction and evaluation of knowledge. Nevertheless, these analyses give some promising evidence of the likely salient predictors of school achievement. A glance at Table 3 illustrates that for GPA a significant amount of variance was explained ranging from 13% to 23%.

A quick summary of Table 3 illustrates some results that underscore the importance of the salient variables described in Table 2. For example, task is a strong predictor for the students. Of the sense of self variables sense of purpose is a strong predictor of GPA for students. Negative self-esteem is a negative predictor of GPA for the students.

The facilitating conditions scales were also utilized as predictors of GPA. These eleven scales were able to explain 23% of variance in the outcome measures. However the only scale that was a significant predictor of GPA for these students was valuing school.

Finally the ASDQ scales were able to explain a significant level of variance for GPA for the students. Mathematics self-concept was a strong positive predictor of GPA but English and General academic self-concept were not significant predictors.

Summary

While the level of variance explained in these latter analyses with GPA was generally smaller than with the self report outcome variables discussed earlier, there are some promising results. Effort, task, sense of purpose (instrumentality), positive and negative self-esteem (monitoring, evaluating and affect of performance), school valuing and mathematics self concept appear to be significant predictors for students.

Utilizing the Model of Future Oriented Motivation and Self-Regulation has allowed us to investigate a complex pattern of motivators, self-concept and facilitating factors for this group of American Indian students. Probably the strongest finding to come from this research is the finding that valuing school for

Table 3
Model Summary and Standardized Coefficients (Beta)
of Multiple Regressions on Valued Academic Outcomes

| Scales | GPA |
|----------------------|----------------------------|
| ISM | R²=0.13* |
| Task | .258* |
| Effort | .149 |
| Competition | -.049 |
| Social Power | .095 |
| Affiliation | -.002 |
| Social Concern | .006 |
| Praise | -.113 |
| Token | .084 |
| Sense of Self | R²=0.22* |
| Sense of Purpose | .286* |
| Sense of Reliance | .091 |
| Negative Self Esteem | -.219* |
| Positive Self Esteem | .033 |
| FCQ | R²=0.23* |
| Unint | .047 |
| Svalue | .279* |
| Psupp | -.110 |
| Tsupp | .143 |
| Phelp | -.095 |
| Lschl | -.042 |
| Pothr | -.015 |
| Nprnt | -.144 |
| Afsch | .014 |
| Npeer | .111 |
| Ppeer | -.019 |
| ASDQ | R²=0.17* |
| English | .133 |
| Mathematics | .257* |
| General Academic | .154 |

Note: * indicates a significant R² and significant predictor at <.05

Note: Unint = Intention to complete university; Svalue = Valuing schooling; Psupp = Positive parent support; Tsupp = Positive teacher support; Pinfl = Positive peer influence; Lschl = Leaving school; Prdth = Pride from others; Nprnt = Negative parental influence; Afsch = Positive affect to school; Npeer = Negative peer influence; Ppeer = Positive peer valuing.

the future is a predictor of GPA. And, the sense of purpose of schooling (instrumentality) was also a predictor of intentions to attend a university, valuing of school (a subgoal to the future), positive affect and GPA. These findings support that American Indian students in this setting achieve in school when they report they believe school is important to their future. This finding suggests that students who have been socialized to believe that school is important to reaching future goals, such as getting a job, are more likely to achieve at school

For many of the students in this setting this was their last opportunity to complete high school. They had either repeatedly failed in public school or their

primary care givers were unable to provide for them at this particular time in their lives. The results of this study are somewhat contrary to what is typically perceived by many who help educate American Indian students. All three authors have extensive field and research experience with American Indian students. Three of the stereotypical views we have often experienced in our work are that the American Indian student is not future oriented, they are unmotivated at school and they do not receive support from the sociocultural context, teachers, peers and parents. These students' perceptions of instrumentality, and getting an education as a subgoal to other future goals clearly contradicts the view that American Indian students are not future oriented. In regard to the impact of the sociocultural context, the stereotypical belief that parents do not support education and peers are a negative influence was also contradicted by the results of this study. These students did not report a high negative parental influence and positive teacher and peer support was highly rated.

With regard to the American Indian student not being motivated, the present goals that reflected how students expect to reach the future and predicted various outcome variables shed light on what students perceive as important in the present to progress successfully toward the future. Obviously, students in this setting highly rated task goals and effort for present classroom work. Task goals predicted their valuing of school, a subgoal to other future goals, and intentions to attend a university and GPA. Clearly, these students valued learning content material as an avenue to a successful adult life. When these students work hard (putting out effort) they experienced a positive affect, valued school and desired to attend a University. Additionally, these students' general concepts of abilities predicted valuing of school, intentions to attend a university and developed a positive affect toward school.

In summary, the analyses provide us with some insights into why some American Indian students do well at school and others do not. Successful American Indian students are task and effort oriented and this is at least partly shaped by the perceived relationship of their present school tasks to the future. They value motivation for achieving at school, and emphasize the importance of teacher and peer support. They have relatively high general academic self concepts, which may help sustain continued motivation.

Implications for Practice and Future Research

The results of this study and the Model of Future Oriented Motivation and Self-Regulation provide helpful implications for practice. Within the sociocultural context of a boarding school, teacher and peer support are important in helping students perceive school as a subgoal to the future, specifically attending a university. An aspect of the model, perceived instrumentality (sense of purpose for schooling), suggests that the perceived relationship between present tasks and valuing education as a subgoal to the future is important for students' present motivation, present goal selection, and self-regulation of effort. These students would likely benefit from significant others, such as teachers, making explicit

the relationship between subject matter and how it applies to being successful in college, and to various careers.

Parents have a more positive than negative influence indicating that they are perceived supportive, even though students are not living daily in their homes. Based on the theoretical implications of the Model, however, parents may lack their own past positive educational experiences to share with their children, and career knowledge that would aid their children in understanding the relationship between subject content and future careers. Given the generational negative educational history of the American Indian and the demographic factors of the American Indian this seems a very reasonable avenue for intervention (Hillabrant, Romano, Stanga, & Charleston, 1992; Mann, 1997). Teachers could provide career knowledge and occupational relationships, and help parents learn about these career paths so that they might support specific subject areas in which their children have interests. Additionally, teachers' daily instruction as to how subjects are related to future goals, found common across cultures, will help give meaning to learning various subject content areas. Both of these types of interventions may foster adoption of task goals to enhance motivation to learn and understand subject content that would help influence domain specific self-efficacy. Additionally, teachers may also consider implementing the teaching of effective study strategies so that students can use their effort in effective ways to learn material. In summary, knowledge about future goals, relationships between school task and those future goals all enhance the elaboration of knowledge used to adopt present goals, such as task goals for learning and understanding. Cantor and Kilstrom (1987) suggest that in those domains where students have been successful they are more likely to develop plans about how to effectively complete an education, and how it can be used to get ahead. In this scenario self-concepts of ability is strengthened. On the other end of the continuum of achievement, those students who do not thrive in school may have less elaborate knowledge, which may lower self-confidence in their abilities, which may lessen motivation and lower level of achievement.

Limitations

This study used a theoretical model of Future Oriented Motivation and Self-Regulation to help explain and interpret the results. However, this study was not a test of the model, merely a thoughtful way to examine how these few factors within the sociocultural context, and the school context might interact to shape the motivational patterns of students who are succeeding, and in turn understand those who have not thrived and explore how these students might be helped. Future research should be directed toward understanding how students cognitively represent the future, and their plans (perceived instrumentality) to reach them. Additionally, research studies should explore the self-regulation strategies of these students and how those strategies translate to study habits and predict their school performance.

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