

AN ANALYSIS OF ACADEMIC ACHIEVEMENT AMONG
GRADES 7 TO 11 STUDENTS IN A NORTHWESTERN
ONTARIO BAND-CONTROLLED SCHOOL

By

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Department of Educational Psychology and Special Education)

We accept this thesis as conforming
to ~~the~~ required standard

THE UNIVERSITY OF BRITISH COLUMBIA

November 1993

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Date Nov. 26, 1993

ABSTRACT

The main purposes of this study were to determine if there were (a) correlational relationships between academic self-concept (ASC), general self-concept (GSC), attendance, (ATT), socioeconomic status (SES), and academic achievement (AA) among grades 7 to 11 students in a band-controlled school in Northwestern Ontario; and, (b) if academic self-concept, global self-concept, attendance, and socioeconomic status were predictors of academic achievement.

The population sample was 70 Native students; 20 in grade 7, 27 in grade 8, 13 in grade 9, 4 in grade 10, and 6 in grade 11.

The results showed: (1) significant correlational relationships between (a) ASC and GSC and ASC and ATT for the grades 7-9 students; (b) ASC and ATT for the grades 10-11 students; and, (2) academic achievement was not predicted by any of the variables.

Future research concerning Native education is suggested.

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ACKNOWLEDGEMENT

It is my sincere pleasure to express appreciation to everyone who contributed to the realization of this thesis.

I am especially grateful to the chairman of my committee, Dr. Art More, for his contribution to this research. His advice and support made this thesis possible.

I also wish to thank my committee members, Dr. Perry Leslie and Dr. Dave Whittaker, for their roles in correcting the drafts and for providing me with valuable suggestions.

I am indebted to Dr. Walter Boldt for his expertise in the statistical analyses.

I also wish to thank Dr. Jackie Baker-Sennett for her valuable feedback during the initial stages of the study.

Special thanks goes to UBC graduate students, Ray Landry and Marie Pighini, for taking time to discuss the research results with me.

I wish to thank my parents, Robin and Gladys Senior, and my sister and brother-in-law, Cheryl and Robert Wall, for the encouragement which they provided throughout this study.

Special thanks goes to the administration, staff, and students of the Indian reserve who granted me the time to carry out the research in their school.

I am also thankful for the providential guidance of God throughout the research and writing.

CHAPTER ONE

THE PROBLEM-INTRODUCTION

A serious challenge facing Native peoples today is the education of future generations. Governments and religious groups, in applying a policy of assimilation, have produced unsuitable results in their attempts to fulfill this self-appointed responsibility (Dawson, 1988; Kirkness, 1981; Luftig, 1983; Pauls, 1984). In spite of these unsuccessful efforts, in 1969, the federal government proposed through its White Paper to grant authority for Indian education to the provincial governments (Pauls, 1984; Ward, 1986).

The National Indian Brotherhood responded in 1972 with its paper entitled, Indian Control of Indian Education (National Indian Brotherhood, 1972). There are two facets to the concept of Indian Control of Indian Education. One factor consists of parental involvement, the other entails local control (Richardson & Richardson, 1986). "Parental responsibility means Indian influence on the educational process" (Kirkness, 1981, p. 452; see also Pauls, 1984). "Parents who are informed, interested, and willing to contribute their time, add a broader dimension to education. However, parents must understand their function in order for

efficient educational services to be provided" (Richardson & Richardson, 1986, p. 21). Reyhner (1992) elaborates, "greater Indian parent involvement can reduce the cultural distance between home and school....Parents need to have effective input as to how and what their children are taught" (pp. 47, 51).

The paper published by the National Indian Brotherhood, which was an outline of educational policy, goals, and philosophy of education from the Native perspective, was accepted by the federal government in 1973. Ward (1986) observed:

The summary of the Indian position on education as stated in the (National Indian Brotherhood, 1992) policy paper is: Indian parents must have full responsibility and control of education. The Federal Government must adjust its policy and practices to make possible the full participation and partnership of Indian people in all decisions and activities connected with the education of Indian children. pp. 10-11

One of the most important results of the National Indian Brotherhood's policy paper, was recognition of the responsibility that Native parents have in promoting

cultural awareness and cultural development in the education of their children (Hurlburt, Henjum, & Eide, 1983; Ward, 1986). In their Manitoba study, Hurlburt et al., (1983), compared 50 Indian students in a local high school that had 400 White students and a teaching staff of 18 White teachers, with 60 Indian students in a locally controlled school where more than 40% of the teachers and 97% of the 600 students were Indians. They reported "that students in a locally controlled school run by American Indians achieved higher academic grades than American Indian students attending a White school....[and they concluded] that American Indian students would be better educated in their own locally run schools" (p. 20).

To counter the argument that perhaps there are differences in academic standards between the two groups of students, therefore a difference in academic achievement, the researchers point out that "spelling, which has been found by [other] researchers to be positively related to academic achievement and mental ability was also assessed, and no difference in spelling was noted between the two groups of students. This lack of difference supported comparability of the two groups, and may suggest that the quality of instruction did not vary greatly between the two

schools" (p. 20).

The move towards Indian Control of Indian Education necessitates an analysis of some of the components that may affect Native students present outlook and performance in the educational system.

The Objectives of the Study

Native students' performances on standardized tests and their high drop-out rates suggests that the present educational system is not adequately serving their needs (Persaud & Madak, 1992; Riffel, 1991). It behooves educators to foresee the factors contributing to this pressing problem and counteract these influences before they become established.

As is documented in chapter 2, there are four prominent variables known to affect academic achievement. Thus, the purposes of this study are to investigate

(1) intercorrelational relationships between the five variables of academic achievement, general self-concept, academic self-concept, attendance, socioeconomic status, and academic achievement; and, (2) to determine if the independent variables of general self-concept, academic

self-concept, attendance, and socioeconomic status are predictors of the dependent variable, academic achievement.

The independent variables have been linked to causes of success and failure in school, primarily in the area of a student's perception of locus of control (Barnes & Vulcano, 1982; Chapman, Cullen, Boersma, & Maguire, 1981; Madak, 1988; Persaud & Madak, 1992; Riffel, 1991). Thus, this combination of variables should provide additional understanding in how a student's interest and achievement in school is influenced by the student's interpretation of his/her control within that environment.

As a foundation for supporting the choice of variables involved in this study, the attribution paradigm was selected because it addresses the perception of causality or the criterion of why a particular event occurred "and...variations in the degree to which people believe they can determine their own success" (Riffel, 1991, p. 26); in other words, attribution theory looks at the search for causes of successes and failures (Hunter & Barker, 1987; Kruglanski, 1975). Possible perceived causes are "luck, ability, and personal effort" (Riffel, 1991, p. 26).

The assignment of accountability affects future behaviour (Weiner, 1972). "Perceptions of causality, rather

than reality, are critical because they influence self-concept, expectations for future situations, feelings of potency, and subsequent motivation to put forth effort" (*italics authors*) (Hunter & Barker, 1987, p. 51).

Hunter and Barker (1987) argue that effort is affected by at least two factors: locus and controllability. Although not the focus of this research, a word of explanation is provided in order to differentiate between these terms. Locus can be internal or external and a student's perception of the location of the cause of his/her failure of success affects feelings of self-concept or as Martin and Coley (1984) state, "locus of control is a concept which refers to the degree to which individuals perceive themselves as having control or influence over their environment (internal) or as lacking such control (external)" (p. 517). Controllability is related to a student's "feeling of potency to affect the outcome by controlling the cause" (Hunter & Barker, 1987, p. 51; see also Kruglanski, 1975).

Effort is the only causal attribution completely under the control of an individual (Frieze, 1976). A student who believes his/her effort will influence the outcome will be more likely to put forth effort (Hunter & Barker, 1987). Research has demonstrated that (1) high achievers exert

effort regardless of the domain; and, (2) that there are developmental trends among students from grade 5 to college in their concepts of ability versus effort in school work (Bloom, 1985; Gardner, 1983; Raviv, Bar-Tal, Raviv, & Levit, 1983; Weiner & Peter, 1973). Younger students appreciate effort more than ability, whereas the opposite evaluation has been detected in older students. Weiner and Peter (1973) suggest that this may be the result of a change in values as a student matures. Riffel (1991) elaborates:

Virtually all students begin school with high self-expectations for academic success....Over the long term, self-concepts are strengthened if students are able to attribute their success to their efforts and not to external forces (for example, luck or excellent teaching) over which they have no control....Success is not enough--how the student interprets that success is more important to self-concept. (p.p. 26-27)

It is not suggested that the variables in this study are the only factors affecting Native education. Nevertheless, these five variables have been shown to be essential elements in the educational process (Metcalf, 1981; Riffel, 1991; Wall & Madak, 1991).

The present study does not take published test norms into consideration when looking at students' tests scores from any standardized test. An individual student is compared only within the sample. The use of standardized test scores is problematic when these tests are used in cultures for which they have not been designed. However, justification for continued use of these tests lie in the fact that a satisfactory alternative has yet to be found.

Significance of the study

The main significance of this exploratory study lies in the combination of factors to be studied. Previous studies have looked at each of the aforementioned variables, but no study presently exist that draws all five variables together and investigates them within the Native (or non-Native) student population. The analysis of these five variables should provide a more complete picture of their roles and how their interactions contribute to Native education.

Definitions of Terms

Definitions of the following terms are presented for

clarification:

(1) Native/Indian. Individuals who are Native people by birth and heritage (i.e. Indian or descendants of Indians, whether or not they are classified as such under the terms of the Indian Act).

(2) Standardized test(s). Refers to any published test that is commonly used in educational settings to assess academic achievement, mental abilities, etc., and has a standard administration and includes norms.

(3) Academic self-concept. "Behaviour in which individuals evaluate (publicly or privately) their ability to achieve in academic tasks as compared with others engaged in the same tasks" (Wall & Madak, 1991, p. 44).

(4) Self-concept. "In general terms, SC is our perception of ourselves; in specific terms, it is our attitudes, feelings and knowledge about our abilities, skills, appearance, and social acceptability" (Byrne, 1984, p. 429).

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

The literature review focuses on the academic achievement factors of (a) general and academic self-concepts; (b) attendance; and, (c) socioeconomic status. It concludes with a statement of the hypotheses.

Factors Related to General and Academic Self-Concepts

Self-concept, self-esteem, self-image, and self-worth have all been used interchangeably in the literature. An effort will be made here to distinguish between these terms.

It was the work of Wilbur Brookover that really set the stage for exploring self-concept. Carlton (1981) observes:

In the application of self-concept theories to learning....[He] discovered that academic self-concept and grades remained solidly correlated even after the effects of intelligence had been partialled out....[however, although] as Brookover discovered, virtually all high achievers had relatively high self-concepts...not all those with high self-concept had high performance levels.

(p.p. 78, 82-83)

Some researchers see self-concept as a part of self-perception, with self-esteem and values being the other two categories (Beane, Lipka, & Ludewig, 1980). Beane et al. (1980) define self-concept as how an individual would describe himself/herself and self-esteem as "the level of satisfaction [one would] attach to that description....Self-esteem decisions, in turn, are made on the basis of what is important to us...our values" (p. 84). These researchers suggests that adolescence is a period in which questions of the self become important as this age group "confronts the classic identity crisis" (p. 84). They also point out that school achievement is one of several variables that has been found to be related to self-concept. Beane and Lipka (1980) further argue that "self-concept is typically defined as the perception one holds of oneself, totally and with regard to several dimensions, and which is influenced by environmental interaction" (p. 1). They see:

Self-concept...[as] the descriptive perception of self in various roles and is judgemental only in that one may assign some qualitative assessment to the role performance....[and] self-esteem...as the valuative assessment one

makes regarding personal satisfaction with role(s) and/or the quality of performance.... In referring to self-concept and self-esteem, distinction must also be made in evaluative terminology....An individual's actual or inferred self-concept is described as clear or confused, complete or incomplete, general or specific, or by other descriptive, but non-valuative terminology. Self-esteem and inferred self-esteem are described as strong or weak, positive or negative, or by other value-related judgemental terminology which suggests the relative comparative value or ranking the individual attaches to the total self-concept or its particular dimensions. (p.p. 2-3)

Reid (1982) defines self-image as "how people see themselves" and self-esteem as "what they put upon themselves" (p. 179). His study investigated the relationship between persistent school absenteeism and self-concept. Self-concept was measured using "the Brookover (1967) Self-Concept of Academic Ability Scale" (p. 180). Results showed persistent school absentees as having lower

academic self-concepts than the control groups. They also came from lower socioeconomic backgrounds than the two control groups.

Martin and Coley (1984) report that "Coopersmith (1981) defined self-esteem as a set of attitudes an individual holds with regard to him- or herself" (p. 517). Hornett (1990) defines self-image or self-esteem "as an individual's perception about self-competence, ability, goodness, and desirability relative to other persons" (p. 43). Atherley (1990) sees self-esteem as:

What a person feels about the discrepancy between the way they are (the self-image) and the way they would like to be (the ideal self). Thus a person whose actual and ideal self are very distanced from each other and who therefore has a negative perception of self is said to have low self-esteem. Research supports a positive relationship between the level of self-esteem and academic achievement. (p. 225)

Riffel (1991) suggests that self-concepts are "the ideas that students develop about themselves--how they understand themselves, what skills they think they possess, what interests they have, and how motivated they are to

develop their skills or pursue their interests" (p. 26).

Further, this researcher points out that:

Some empirical studies show [self-concept]...
to be a relatively weak correlate of achievement
(.20 or so), accounting for about five per cent
of the variance in student achievement....[also]
academic self-concept is thought to operate as
one of many variables which mediate the relationship
between teaching and learning. (p. 26)

From her brief review, Parry (1982) states, "self-
concept theorists all accept a view of the developing self-
concept as being dependent on the individual's perception of
his total appraisal of how significant others view him"
(p. 12). Luftig (1983) stresses, "the self-concept has been
defined as the sum total of how an individual views himself
or herself" (p.p. 251-252). And according to Martin and
Coley (1984) "self-concept refers to the self-knowledge one
possesses regarding one's strength and weaknesses. It is
that part of one's personality of which one is aware"
(p. 517).

Marshall (1989) sees self-concept as:

The perceptions, feelings, and attitudes that
a person has about himself or herself. The term

self-concept and self-image are often used interchangeably to designate a global conception of self. This global self-concept is made up of many dimensions.

One dimension is self-esteem (or self-worth). Self-esteem refers specifically to our self-evaluations---that is, our judgments about our own worth---whereas self-concept refers to other aspects as well---physical characteristics, psychological traits, and gender and ethnic identity.

As children develop, self-concept becomes increasingly differentiated into multiple domains.

(italics author's) (p. 45)

Pepper and Henry (1991) argue that:

Self-esteem is about feeling good about oneself, feelings of personal worth, and feelings of personal effectiveness in how a youngster values and regards his or her performance. Because self-esteem is a feeling, it always expresses itself in the way a youngster acts....Self-esteem is hard to identify because it is experienced continuously and constantly and changes from day to day, from situation to situation, even from

minute to minute....self-esteem is different from self concept. Self concept is a 'theory' or belief that youngsters have about themselves. Self concept refers to the individual's personal perceptions of his or her view of life and of self. A child may hold a view of himself or herself that does not correspond to his or her behavior....Self concept is more stable than self-esteem and is altered gradually. Self-esteem can and does change form situationally. It is self-esteem that directly influences the child's performance or behavior in a specific situation. (p.p. 146-148)

Hoge, Smit, and Hanson (1990) seem to use self-esteem and self-concept interchangeably. They conducted a two year longitudinal study with 322 grades 6 and 7 students from two schools, ranging in age from 11 to 13, looking at several factors including self-esteem. Each academic year the students completed two questionnaires, one in the fall and one in the spring. The students at school 1 had a higher socioeconomic status than the students at school 2. Global self-esteem was measured using the Rosenberg Self-Esteem Scale. Academic self-esteem was measured using the Self-Concept of Schoolwork Ability General Scale. "At the

specific level, we used the eight-item scales for specific self-concept of ability written by Brookover et al. (1962)" (p. 119). For academic achievement, they used the average grades from the fall semester. "When global or general academic self-esteem was the outcome, we used grade point average over all courses; when we looked at self-esteem in a specific discipline, we used grades in that discipline" (p. 119). Their results showed that school experiences, (for example, feedback from teachers), do have some significant effects on self-esteem each year.

Academic self-concept has also been defined in the literature in a variety of ways. According to House (1992), this construct:

Refers to a student's perceptions of his or her academic abilities, and those perceptions are influenced by school experience and the student's interpretations of those experiences in the context of the school environment....

Academic self-concept is a multifaceted attribute that is continuously modified on the basis of school performance. (p. 5).

In a 1979 study, Heaps and Morrill compared the self-concepts of 200 Navajo and 167 White high school students in

Arizona, using the Tennessee Self-Concept Scale. Results show that "the difference between the total positive score, or overall level of self-esteem, for the Navajo and white student samples was not significant" (p. 12).

Wall and Madak (1991):

Compared the academic self-concept of Indian students who live on the same reserve but who attend either a public school or a band-controlled school....[They also] compare[d] the two groups of students with regard to the levels of educational aspirations that they perceived their parents and their favourite teacher held for them.
(p. 44)

In this study, there were 20 students attending the band-controlled school and 22 students attending the public secondary school. These researchers used the Michigan State General Self-Concept of Ability Scale and cite others who have used this scale "to study academic self-concepts of both Native and non-Native grade 7-12 students" (p. 46). Included in the above scale was the Perceived Parental Evaluation of Ability and Perceived Teacher Evaluation of Ability. "These two instruments were designed by Brookover to elicit students' perceptions of the academic expectations

held for them by parents and teachers" (p. 46). Results showed no significant difference between the two groups of students in terms of academic self-concept. However:

Students attending the band controlled school perceived their parents as holding significantly higher educational aspirations for them than did students who attended the public school....[also] students attending the band-controlled school perceived that their favourite teacher had significantly higher educational aspirations for them than did their peers who attended the public school. (p. 47)

Scheirer and Kraut (1979) report that "several correlational studies [which] have found strong relationships between children's self-concepts and their academic achievement" (p. 132). Luftig (1983) cites researchers within whose work:

Self-concept has been shown to be positively related to school achievement in elementary school children...and in school achievement with intermediate and secondary school pupils....Academic success and positive self-concept have also been shown to be positively correlated in Black and

Hispanic children...in the mentally retarded...in physically handicapped children...in the sensory impaired...and in learning disabled pupils. (p. 252)

Beane, Lipka, & Ludewig (1980) discuss research by William McGuire who used interview techniques to determine the self-concept of children. He worked with 560 children in grades 1, 3, 7, and 11, and found age trends in the data. About 15% of a grade 11 student's self-concept centred around school as opposed to 5% for a grade 1 student. McGuire concluded "that a student's sense of self is tied to academic performance and the quality of the relationships he/she has with fellow students and teachers" (p. 87). These researchers found similar results using McGuire's method with 1,102 grades K-12 students. They concluded "that about a fifth of a child's sense of self is derived from the school experience" (p. 87) and noted that students tended to describe themselves in increasingly negative terms as they moved through the school system.

Altmann and Dupont (1988) conducted a study in which they attempted "to test the hypothesis that academic self-concept...[would] be a better predictor of report card grades than general self-concept" (p. 170). With a sample of 198 students in grades 3 to 6, they administered the

Students's Perception of Ability Scale (SPAS) and the Piers-Harris Children's Self-Concept Scale (CSCS) and correlated these two scores with students' end-of-year report card grades. Using the Pearson product-moment correlation and multiple regression analysis statistical methods, the researchers found:

Significant and positive relationships between measures of self-concept and academic achievement. The full scale SPAS, an academic self-concept measure, produced a significantly higher correlation with academic achievement ($p < .05$) than did the CSCS which is a more global measure. We thus may conclude that academic self-concept, as measured by the SPAS, accounts for significantly more variance in academic achievement than global self-concept as measured by the CSCS....This study indicates that children's perceptions of their academic ability are significantly related to their achievement in school. (p. 173)

Atherley (1990) "investigated the hypothesized relationship between the self-concept (defined as 'an umbrella term for all other self terms'...) and both academic achievement and socio-economic status" (p. 225). In

this study, 213 11-year-olds from three schools were classified 'socially' based on their school records and the classification of the father's occupation by the Office of Population, Censuses and Surveys. The Piers-Harris Self-Concept Scale was used to measure self-concept. Results suggests "that it is the child's level of academic ability which influences the self-concept, not their socio-economic status" (p. 227).

Chapman, Lambourne, and Silva (1990) conducted a study in which they "examined the associations between academic self-concept, reading performance (as a primary indicator of school achievement), and antecedent cognitive and family background measures over time....home background factors included socio-economic status (SES)" (p. 143). Their sample was made up of 435 children who were assessed from birth to 11-years-of-age. Parental and family characteristics were assessed using a number of different measures, as were cognitive and achievement levels (see Chapman et al (1990) for details).

The longitudinal data in this study do not support the belief that family background variables have any major, long term effect on academic self-concept. Further, family

interest in cultural, political, and intellectual activities were not associated with either academic self-concept or reading achievement. Academic self-concept was affected primarily by past achievement and past perceptions of ability....home background variables appeared to have no direct or major indirect long lasting effects on achievement or academic self-concept....Our results strongly support the hypothesis that academic self-concept is primarily the result of different levels of school achievement. This result is consistent with studies of the relationship between achievement and academic self-concept reported by Byrne (1984) and Hansford and Hattie (1982). (p.p. 149-150)

Chapman et al. (1990) aptly sums:

The experience of schooling, involving comparison with others and feedback about academic performance, is likely to be the main factor in the development of an academic self-concept. From that time, the interplay between academic self-concept and achievement is probably reciprocal....Stanovich (1986) refers to this reciprocal effect as the

'Matthew effect', in which competent achievers do better over time, and poor achievers become more self-deficient over time....In essence then, academic self-concept would seem to be closely linked to actual achievement outcomes in school.
(p. 150)

Some studies have shown the correlations between general self-concept and academic achievement to "have been mildly to moderately positive....These results have been interpreted by some as indicating [that] the importance of self-concept in education has been overemphasized, especially if viewed as a potential predictor of academic achievement" (Lyon & MacDonald, 1990, pp. 1135-1136; see also Carlton, 1981; Chapman, Lambourne, & Silva, 1990; Madak, 1988; Riffel, 1991). Chapman et al. (1990) state, "academic self-concept has a stronger relationship with school achievement than does general self-concept with achievement" (p. 142).

Lyon & MacDonald (1990) note that the results of recent studies suggests that "there may be many facets to the construct of self-concept" (p. 1136) (see also Carlton, 1981). In viewing self-concept as having several characteristics, some researchers have come up with a

hierarchical model (Shavelson, Hubner, & Stanton, 1976). General self-concept is assumed to be at the top of this structure. At the next level down, are found two specific components: academic self-concept and nonacademic self-concept. Academic self-concept would then be divided into specific subject areas and nonacademic self-concept would be divided into its emotional, physical, and social factors. However, there is no consensus among researchers for a model on the structure of self-concept. Shavelson, Hubner, and Stanton (1976) who have proposed seven characteristics of self-concept and believe that there are both multidimensional and hierarchical facets to self-concept, have received support from recent research (see Byrne & Shavelson, 1987). In their study, Byrne and Shavelson (1987) tested "the invariance of a multifaceted, hierarchical SC [i.e. self-concept] structure for adolescent males and females" (p. 379). Using a self-report battery of SC which included three general SC scales, three academic SC scales (Self-Concept of Ability Scale--Form A was found to be the most reliable measure of academic SC), three English SC scales, and three mathematics SC scales, they found "that the assumption of an invariant SC structure for males and females cannot be taken for granted; relations among SC

facets do differ across gender. The findings also show that SC instruments measure particular facets of SC in different ways, and with different reliabilities for males and females" (p. 382).

Lyon & MacDonald (1990) suggests that previous contradictory findings "may be partially a function of inadequate operationalization of the self-concept" (p. 1136). In their study of 122 Grade 6 students in a suburban midwestern school district, they assessed 67 girls and 55 boys on cognitive abilities, general self-concept, academic self-concept, and locus of control (academic experiences in the academic environment). They reported significantly higher correlations between academic self-concept and academic achievement than between general self-concept and academic achievement and between locus of control and academic achievement (italics mine). The researchers concluded that academic self-concept is a variable worthy of further study in understanding students' achievement behaviour. Butterfield (1983), in commenting on the high dropout rates among high school students pointed out that "It is not surprising, then, that educators of Indian students see a lack of positive self-image in these students" (p. 51). (see also Luftig, 1983; Pauls, 1984).

"[There] is also evidence to suggest that self-concept of Native American children is negatively correlated with chronological age and years of schooling....[The] relationship between low self-concept in American Indian children as a function of academic achievement has also been reported by a variety of...experimentors" (Luftig, 1983, p. p. 252-253). In addition, some studies "suggest[s] that the school and non-school environment can have a profound effect on the child's self-concept" (Metcalfe, 1981, p. 66).

Rampaul, Singh, and Didyk (1984) published a study which investigated the relationship between academic achievement and self-concept among Native Indian students. In their study, 22 grade 3 students and 19 grade 4 students were tested for academic self-concept using the Michigan State General Self-Concept of Ability Scale. Academic achievement was measured by the Canadian Tests of Basic Skills. They found significant positive correlations [the range was .43 to .61] between "self-concept and academic achievement across all grade levels and for both sexes" (p. 219).

Pepper and Henry (1991) point out that "the self-concept of school-related ability is a better predictor of success in school than is overall self-concept. It appears

that an important limiting factor of achievement in school is the student's concept of his or her ability" (p. 149).

Teachers' perceptions of Indian students in their understanding of English in the classroom may also present problems for the students' self-concept. "Perhaps local control of their children's education would produce better results" (Hurlburt, Henjum, & Eide, 1983, p. 17).

Although there is still not a clear, accepted operational definition of self-concept, it "has been identified by many educators as a critical variable in the education of children" (Madak, 1988, p. 4).

Madak (1988) suggests the following guidelines when measuring self-concept:

- (1) select measuring instruments which have high validity and reliability ratings;
- (2) select measuring instruments that are appropriate for the population being tested (eg., know the reading level of your population, ethnic background, etc.)
- (3) make sure that the instruments are administered and scored appropriately; and,
- (4) realize that no self-concept instrument will produce an exact score. Therefore, all scores

must be viewed as an imperfect estimate. (p. 6)

He also cites research which indicates that Native children have lower self-concept ratings than their non-Native counterparts. Madak (1988) concludes from his review that for Native students, the concept of self includes the student's relationship to his/her culture. However, he also points out that some researchers believe "it is poverty, not cultural differences which account for poor self-concept and school performance" (p. 19).

Chapman, Cullen, Boersma, & Maguire (1981) investigated the "interrelationships between....general and academic self-concept, academic locus of control, and self-expectations of future academic performance, along with the school achievement one year later...in elementary school children" (p.182). There were 376 students in grades 3 to 6 from predominantly middle class families in their sample. Variables were assessed using available scales such as the Piers-Harris Children's Self-Concept Scale. Results showed academic self-concept and expectations individually correlating with report card grades. They also found that:

Attributions of responsibility over successful school outcomes are moderately related to school achievement, whereas perceived control over

failure is not....The implication of this finding is that success in school is partly related to beliefs in individuals that they have some control over the cause for successful outcomes. Failure outcomes, on the other hand, are not seen as related to achievement, at least at the elementary level in this sample. (p. 188).

In addition, their results showed "low and non-significant correlations between general self-concept, as measured by the Piers-Harris, and all the other variables investigated in the study. Such a finding is consistent with the notion that global measures of self-concept are less fruitful in predicting school achievement than more specific instruments" (p. 188). Chapman et al. (1981) also point out that "considered together, the results of the regression analyses indicate that, as would be expected, 1977 grades are the strongest predictor of 1978 grades" (p. 189).

Zarb (1981) explored the relationship between a number of variables, including academic self-concept and academic achievement. 128 grade 10 students, 15-16 years-of-age, attending an inner-city secondary school were selected for this study. Most of the students were from "the lowest socio-economic category" (p. 894). Some of the students had

repeated a grade in the past, some had failed more than two of eight courses at the end of grade 10, and some had failed either one or two courses. Results showed that "only poor Academic Self-Concept was significantly related to poor academic performance....Academic Self-Concept was the best single predictor of Grade Point Average for both the male and female samples....when the effects of the other five variables were partialled out" (p.p. 897-898).

In sum, this is still obviously an area in which much research needs to be done in order to more fully understand the relationships between general self-concept, academic self-concept, and academic achievement.

Factors Related to Attendance

"The relationship between acceptable levels of attendance and the high school diploma is crucial. The assumption is that for learning to take place, the teacher must have learners in attendance, and a consistently high level of attendance is necessary for learning" (Brodbelt, 1985, p. 64).

High dropout rates among Indian students is a well established fact. "The reasons for dropping out of school

can be broken down into three main categories: (a) social factors; (b) student factors; and, (c) school factors" (Persaud & Madak, 1992, p. 236). Among several characteristics, "belonging to a language minority group" has been identified as a social factor associated with dropout behaviour" (p. 237). Among student factors, some research suggests that high school dropouts did not feel that school had something "important to offer to them" (p. 237). Among school factors, "one of the best predictors of school dropout behavior has been reported to be academic performance....furthermore, students who dropped out of school were reported to have...lower locus of control than graduates....[in addition] school attendance has been shown to be another strong predictor of school dropouts behavior" (p.p. 237-238).

Persaud and Madak (1992) cite researchers who "have hypothesized that, when taken together, the evidence concerning why students drop out of school strongly suggests that dropout behavior is a long-term process in which the student slowly becomes disenfranchised from school and the schooling process" (p. 248).

Among the Native students who remain in school absenteeism is a prevalent problem (Berger, 1973;

Butterfield, 1983; Chavers, 1991; Dunn & Griggs, 1990; Gade, Hurlburt, & Fuqua, 1986; Hurlburt, Krockner, & Gade, 1991; Kirkness, 1981; Pauls, 1984; Riffel, 1991).

Brodbelt (1985) proposes that "absenteeism must be examined from two bases: (a) the nature of out-of-school factors that give rise to poor attendance, and (b) the in-school factors that are influential in causing absenteeism....[because in the long run] it is the individual pupil who is the real loser when he or she is consistently absent" (p. 64). Brodbelt (1985) further cites Wilbur Brookover who found that academic achievement increases as attendance increases. In addition:

Attendance is influenced by a combination of many overlapping factors. Wilbur Brookover (1982) found that effective attendance related primarily to the school ideology. The ideology 'refers to the general beliefs, norms, expectations, and feelings which characterize the school social system. The belief that students can learn and that teachers can teach is an important characteristic of an effective learning environment'. (p. 65)

Further, Brodbelt (1985) cites a 1982 study by John Easton

and George Englehard who looked at the attendance and reading achievement of a group of elementary and junior high school students.

They found [that] 'student absence rates are significantly related to both teacher-assigned reading grades and standardized test scores after control variables including previous achievement are removed by the regression equations.' Moreover, 'seventh and eighth grade absences are significant predictors of reading achievement in these grades'. (p. 65)

Broadbelt (1985) also cites a 1976 study by Nancy Karweit who: "found average daily attendance to be positively related to achievement, especially for ninth and twelfth graders. In specific subject areas, attendance makes a significant difference" (p. 65). "In a parallel study to that of Easton and Englehard, Kean, Summers, and Raivetz (1979) found that pupil attendance and reading achievement test-score gains correlated positively in Philadelphia public schools. Logically, reading provides the foundation for all academic subjects and is crucial to school success" (p. 65).

In a study published in 1983, Boloz and Varrati tried

to identify variables which may effect the academic attendance of some grades 3, 6, 8, and 12 Navajo students in Arizona. Previous studies within this particular school district had indicated socio-economic status (SES), stability, and average yearly attendance as possibly effecting student achievement as measured by standardized testing. In these tests, most of the Navajo students consistently scored below their public school counterparts across the state.

Stability was defined in the study as the "student's total length of uninterrupted enrollment at the public school" (p. 24). The median for grades 7 and 8 was 5 years and "this was selected as the lower limit at which students would be labelled stable" (p. 24). The average daily attendance was determined by totalling all students attendance over the last seven quarters in a grade. Then an average was set for each grade which eliminated students who had less than the seven quarters attendance. "Students were assigned a status of above-average attendance or below-average attendance for that grade level" (p. 25). Socio-economic status was determined by a student's meal classification. Parents could apply for free meal benefits for their children based on government standards for income

level and family size. In this study, a student was classified as high SES if he/she did not qualify for free or reduced meal benefits, and as low SES if he/she did.

There are three immediate problems in looking at the results. First, all data were compiled from cumulative records kept by others for different reasons. Secondly, sample sizes were not given and cost determined sampling procedures. The third problem is the lack of reported statistical evidence to support the conclusions. However, of concern here, are the conclusions drawn regarding the effect of attendance on academic achievement.

The effect of school attendance on achievement appeared to be linked to SES. In other words, absences appeared to have little effect on achievement of high SES students. The authors concluded that their results were consistent with those of other researchers, whom they cited, who found a link between school attendance and a student's academic achievement.

Monk and Ibrahim (1984) point out that "if some periods of instruction are more important for learning than are others, then the timing of absences can have substantial effects on how much a given student learns....absence not only reduces the amount of schooling time but causes a

disruption in the sequence of learning" (p.p. 296-297). They further observe that "the impact of a day of instruction lost can differ in important ways for an individual student, depending on the number of classmates who are absent simultaneously" (p. 299). In their study, a sample of 227 grade 9 students from a college preparatory algebra program were selected for investigation because "the effects of absentee patterns are likely to be most evident in highly sequenced types of instruction where emphasis is placed on whole class instruction" (p. 300). For their variables, they chose to use the results from a state-wide achievement test on the algebra curriculum as the dependent variable, and attendance data from school records. (see Monk & Ibrahim for details on determining the quality of a student's absence). The results demonstrate that apparently "the timing of absence makes a difference in terms of students' achievement. However, the data do not indicate that absences during one period...of instruction are consistently more important than absences occurring during other periods" (p. 308). They sum, "our results show that being absent when large numbers of classmates are absent has an insignificant effect on learning. It is quite another matter to be absent on a high attendance day" (p. 308).

The present body of research in this area appears to support the need to further explore the relationship between school attendance and academic achievement for the Native student. As Brodbelt (1985) observes, "learning is dependent upon the availability of the learner" (p. 66).

Factors Related To Socioeconomic Status

Chapman, Lambourne, and Silva (1990) cite researchers who have found an association between self-concept, (in particular academic self-concept), and family characteristics such as its structure, social status, and psychological characteristics. For example, "Song and Hattie (1984) found that social status was a significant influence on academic achievement through its effect on family psychological characteristics and self-concept" (p. 143).

Barnes and Vulcano (1982) state that, "Research...has shown that lower social class students have lower academic self-concept scores than higher social class students even when ability levels are controlled" (p. 61).

These results are based on studies conducted among non-Native populations. Cultural differences may be a factor in differentiating between students' socioeconomic status.

Statement of the Hypotheses

Based on the literature reviewed, the following hypotheses are proposed.

1. Academic self-concept will decrease as grade level increases.
2. There will be no significant difference between general self-concept and grade level.
3. Academic self-concept will positively correlate higher with academic achievement than general self-concept with academic achievement. The correlation between general self-concept and academic achievement will be close to zero. These relationships will be stronger for grades 7 and 8 students.
4. Attendance will positively correlate with academic achievement.
5. The socioeconomic status (SES) of the students will positively correlate with academic achievement, i.e. the higher the SES of the student, the higher his/her academic achievement.
6. SES will also positively correlate with both academic self-concept and general self-concept.

7. Academic self-concept, general self-concept, attendance, and socioeconomic status, with varying degrees of strength, will all be seen as predictors of the dependent variable, academic achievement.

CHAPTER THREE

METHODOLOGY

Students

The population for the study was grades 7 to 11 Native students from an isolated community in Northwestern Ontario. Ages varied from conventional placements as school attendance is volatile. Some students are mobile and have not have completed all of their education at the school on site. In addition, dropping out of school starts to occur in grade 8.

The students are instructed through subject based curriculum guides supplied by the Ontario Ministry of Education. Modifications are made by classroom teachers to suit the northern environment and Native culture.

The total population for grades 7 to 11 was 117 students. Of this, a total of 70 students participated in the study. These students were all volunteers. There were 20 students from grade 7, 27 students from grade 8, 13 students from grade 9, 4 students from grade 10, and 6 students from grade 11. It should be noted that a number of students leave

the community each year to attend high schools in larger centres. This affected the number of students available for this study and may also have had an effect on the obtained results.

School

The school is located in an isolated Northwestern Ontario community of approximately 1600 Cree Indians, approximately an hour and a half by air northeast of Winnipeg, Manitoba.

The school originated under the direction of Indian and Northern Affairs Canada. However, plans were eventually undertaken to place control in the hands of the community. This was achieved in 1989 and the education of the students is now under the control of the local Education Authority which is staffed by community members. This change is consistent with the position paper of the National Indian Brotherhood, whose aims were (1) parental responsibility and (2) local control of education (National Indian Brotherhood, 1972).

Education is provided for students from junior kindergarten to grade 11. The total enrollment is

approximately 500. There are 27 teachers. 17 are Native with Band membership. The remaining 10 teachers are non-Native.

Instruments

The purpose of this study was to investigate several variables that have been shown to affect academic achievement. Of primary interest was the correlational relationships between the independent variables of academic self-concept, general self-concept, socioeconomic status and attendance, with academic achievement as the dependent variable. Of secondary interest was determining which of the independent variables were predictors of the dependent variable.

To investigate the proposed hypotheses of this study, two instruments were used: The Michigan State Self-Concept of Academic Ability Scale (Brookover, Erickson, & Joiner, 1967); and the Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969). These instruments were selected for this study because of their widespread use and recommendations by other researchers.

The Michigan State Self-Concept of Academic Ability Scale (SCA) was used to measure the students' academic self-

concept. The SCA is an 8-item Likert-type self-report scale. Each question has 5 responses which are labelled 'a' through 'e', with 'a' being the most favourable response. A student's score is determined by assigning values of 5 to 1, with the most favourable answer, 'a', receiving a value of 5. A summation of values yields a potential score of 40 points.

A normative sample of 1,050 grade 7 students was originally used to determine the reliability and validity of the SCA (Brookover, Paterson, & Thomas, 1962). Internal consistency reliability measures produced coefficients of .84 and .82 for grade 7 females and males respectively (Paterson, 1966). Later studies involved students from grades 7 to 12. For example, test-retest coefficients of stability over a one year period with a sample of 5,976 grade 8 to 12 students, produced results from .724 to .688 for females and males combined (Brookover, Erickson, & Joiner, 1967). In a six year study using a sample of 7,126 grade 7 to 12 students, correlations ranged from .48 to .63 (Brookover et al., 1967).

Validation studies which specifically used the SCA to investigate the relationship between academic self-concept and academic achievement yielded the following results: (a)

Calsyn and Kenny (cited in Byrne, 1984) conducted a five year longitudinal study which involved 556 grade 8 to 12 students. They reported a correlation of .56 for the total sample at the grade 8 level; (b) Shavelson and Bolus (cited in Byrne, 1984) published a correlation of .37 for 99 grade 7 and 8 students; (c) Morse, in a 1963 study which involved 114 Black students and 1482 White students, found correlations of .43 and .65 respectively; and, (d) in a 1964 study of 100 delinquent boys, Haarer reported a correlation of .41 between academic self-concept and academic achievement without IQ partialled out, and a correlation of .39 with the IQ effect controlled.

The Piers-Harris Children's Self-Concept Scale was used to measure the students' general self-concept. This scale consists of 80 first-person declarative sentences. The sentences are set up to be answered either 'yes' or 'no'. 'Yes' is an indication that a student feels the sentence describes the way he/she feels about himself/herself. A student's raw score (total number of responses in the positive direction) can be converted to T-scores and are available as an overall self-concept score or as a profile of six cluster scores, (1) Behaviour; (2) Intellectual and School Status; (3) Physical Appearance and Attributes; (4)

Anxiety; (5) Popularity; and, (6) Happiness and Satisfaction (Piers, 1984). "The Piers-Harris Children's Self-Concept Scale...is one of the most recommended global self-concept instruments available for use with children...and is intended for use with children in grades 3 through 12....Reliability in a test-retest situation over a four-month period ranged from .71 to .77" (Altmann & Dupont, 1988, p. 171).

The Piers-Harris was standardized on 1,183 students from grades 4 to 12 in a small Pennsylvania town. It has not been renormed by its authors since its original development in the 1960s. However, as Epstein (1985) notes:

Recent reliability studies generally confirm and expand on the results of the original studies. Test-retest reliabilities ranged from .42 to .96, with a mean of .73. Studies investigating internal consistency yielded coefficients ranging from .88 to .93 on the total scale. In another study using the scores from the original norm group, the internal consistency coefficient for the total scale was .90, with the cluster scales ranging from .73 to .81. Thus the instrument appears to be highly

reliable in terms of temporal stability and internal consistency....In the realm of inventories of this nature, the Piers-Harris is a psychometrically adequate instrument whose usefulness in research has been documented. (p. 1168-1169)

Jeske (1985) aptly sums, "the Piers-Harris appears to be the best children's self-concept measure currently available. It is highly recommended for use as a classroom screening device, as an aid to clinical assessment, and as research tool" (p. 1170).

The academic achievement of the grade 7 to 9 students was determined from raw reading scores obtained from the Canadian Tests of Basic Skills (CTBS) and the grade 10 to 11 students from teacher rankings. These rankings were assessed by the language arts teacher as grade equivalent standings.

The CTBS is a teacher-administered and teacher-scored test. Hoge, Smit, and Hanson (1990) note that "academic achievement can be measured by grades or by standardized test scores" (p. 117). Since reading forms the basis for all the other subject areas, data on this subject provided an effective assessment of academic achievement.

A lifelong member of the community who is also employed

by the Education Authority, rated the students as being high, middle, or low according to their parents/guardians socioeconomic status (SES). This rating was done on the basis of source of income or source of employment. Thus, this rating was not the students' actual SES.

Students of parents who worked at the school were rated as "high". Students of parents who were employed by the band were rated as "middle", and students of parents who depended on Social Assistance were rated as "low". Ratings were coded according to 1 = high, 2 = middle, 3 = low. Thus, significant correlations between SES and any of the other variables have a negative sign in the Tables found in chapter 4.

Attendance records for each student were accessed to determine the number of days absent from school during the present school year. This number was used in the analyses. Hence, significant correlations here also appear with a negative sign in the summary Tables found in chapter 4.

The attendance data for the present study was not analysed to account for the importance of when absenteeism occurred as noted in the chapter two literature review.

Experimental Design

A correlational design incorporating multiple regression and analysis of variance was used in this study. The choice was based on the number of variables involved and the number of grades in the sample. Also, from the literature review it was determined that this was the choice of design primarily used for studying these variables.

The design was selected to investigate the relationships between academic achievement and the following variables: academic self-concept, general self-concept, attendance, and socioeconomic status. Of secondary interest was determining which of the independent variables were predictors of the dependent variable.

The study involved grades 7 to 11 Native students from an isolated community in Northwestern Ontario.

Procedure

Permission to conduct the study was given by the local Education Authority.

A total of seventy students participated. They were assessed over a period of four days in their classrooms.

Assessments lasted from 15 to 20 minutes. Prior to and during each testing session, students were given the opportunity to ask questions.

Statistical Analyses

A Kruskal-Wallis test was performed among grades 7 to 9 students (group 1) and grades 10 and 11 students (group 2), to ascertain the use of a standardized reading score as an indicator of academic achievement.

The data for academic self-concept and general self-concept were descriptively analyzed by computing the means and standard deviations. An analysis of variance was carried out between the different grades for the means associated with (a) academic self-concept; and, (b) general self-concept. Internal consistency measures of the Michigan State Self-Concept of Academic Ability Scale and the Piers-Harris Children's Self-Concept Scale were calculated for the sample using the Pearson r . The Spearman-Brown prophecy formula was applied to the resulting coefficient in order to estimate the reliability of each test.

Correlations were calculated to determine the strengths of any relationships among the variables.

A multiple regression analysis was carried out with regard to the predictive relationship between the independent variables and academic achievement.

CHAPTER FOUR

RESULTS

The results pertaining to the research hypotheses tested in this study are presented in this chapter in three sections.

The grade 10 and 11 students were analyzed separately from the grade 7 to 9 students, since academic achievement was measured differently for both groups (see chapter three).

First, the effectiveness of the measure of academic achievement was investigated. This analysis (Kruskal-Wallis One-Way Anova on the reading means, i.e. academic achievement for each grade group, [group 1--grades 7-9; group 2--grades 10-11]) is presented under the heading 'Academic Achievement Measure'.

Second, correlational relationships were determined for the five variables. Analyses concerning the correlational relationships between academic self-concept, general self-concept, socioeconomic status, attendance, and academic achievement are presented under the heading 'Correlational Relationships among the Variables'.

Third, predictors of academic achievement were explored. The analysis concerning the stepwise multiple

regression analysis among the five grade levels is presented under the heading 'Predictors of Academic Achievement'.

Academic Achievement Measure

The Kruskal-Wallis (K-W) procedure is a nonparametric alternative to analysis of variance. In this analysis it was used to evaluate the measure of academic achievement.

The K-W procedure was used for both groups. The result ($b = 3.5014$; $p > .05$) show that differences between grades 7-9 students in relation to their reading achievement scores were not statistically significant (i.e. there is no difference in the measure of academic achievement based on standardized reading scores between the 7, 8 and 9 grade levels). A correction made for ties in the data was not sufficient to alter the above conclusion. The result ($b = 1.1364$; $p > .05$) obtained for the grade 10 and 11 students was also not statistically significant, even with a correction made for ties.

Correlational Relationships among the Variables

This section outlines the findings for the

correlational analyses among the five variables.

As an introduction, summary matrices are presented for the two grade groups. Table 1 is a presentation of the intercorrelations for grades 7 to 9 among the four independent variables and the dependent variable. Table 2 facilitates similar information for grades 10 and 11.

Table 1

Intercorrelations of Academic Achievement (AA), Academic Self-Concept (ASC), General Self-Concept (GSC), Attendance (ATT), and Socioeconomic Status (SES) For Grades 7 to 9

	AA	ASC	GSC	ATT
ASC	0.115			
GSC	-0.132	0.642**		
ATT	-0.109	-0.344**	-0.078	
SES	0.056	-0.192	-0.244	0.162

n = 60; *p < .05; **p < .01

Table 2

Intercorrelations of Academic Achievement (AA), Academic Self-Concept (ASC), General Self-Concept (GSC), Attendance (ATT), and Socioeconomic Status (SES) For Grades 10 and 11

	AA	ASC	GSC	ATT
ASC	0.087			
GSC	-0.320	0.003		
ATT	0.275	-0.660*	0.045	
SES	0.345	-0.517	-0.039	0.228

n = 10; *p < .05; **p < .01

As would be expected, there is a significant correlation between attendance and academic self-concept for both groups. The minus sign in both tables is indicative of the fact that attendance was measured as the number of days absent from school.

The grades 7-9 students also showed a significant correlation between general and academic self-concepts. This was also expected since academic self-concept is seen as a facet of general self-concept. A zero correlation was found

between general and academic self-concept for the grade 10 to 11 group although this was not predicted by the literature.

The first hypothesis tested in this section was that academic self-concept would decrease as grade level increased. Results from the Michigan State General Self-Concept of Ability Scale (SCA) are presented in Table 3. (This scale despite its name is a measure of academic self-concept).

Table 3
Michigan State General Self-Concept of Ability Scale
Mean Scores by Grade

	Mean	Standard Deviation	Range	Sample
Grade 7	25.5	4.35	17-34	n=20
Grade 8	26.1	4.12	18-34	n=27
Grade 9	23.9	3.48	17-29	n=13
Grade 10	28.8	5.32	21-33	n=6
Grade 11	25.8	4.45	20-31	n=4

*p < .05; **p < .01

A one-way analysis of variance of academic self-concept across grade levels ($F = 1.1398$, $p > .05$) revealed no statistical significance. Thus, hypothesis one was rejected.

The Spearman-Brown prophecy formula was used to estimate the internal consistency reliability of SCA for the sample. The internal consistency reliability measure for the SCA yielded a coefficient of .78 for the five grades.

The second hypothesis tested was that there would be no statistically significant difference between general self-concept and grade level. Results from the Piers-Harris Children's Self-Concept Scale are presented in Table 4.

Table 4

Piers-Harris Children's Self-Concept Scale
Mean Scores by Grade

	Mean	Standard Deviation	Range	Sample
Grade 7	44.7	13.53	20-65	n=20
Grade 8	49.7	14.83	19-74	n=27
Grade 9	47.5	15.20	21-70	n=13
Grade 10	47.3	16.03	32-66	n=6
Grade 11	51.0	12.73	31-69	n=4

* $p < .05$; ** $p < .01$

A one-way analysis of variance of general self-concept across grade levels ($F = 0.4239$, $p > .05$) revealed no statistical significance. Thus, hypothesis two was accepted as tenable.

The internal consistency reliability measure (Spearman-Brown) for this scale yielded a coefficient of .94 for the five grades.

The third hypothesis tested was that (a) academic self-concept would correlate higher with academic achievement than general self-concept with academic achievement and due to the huge dropout rate prevalent among this population (b) these correlations would be lower for the high school students.

Academic achievement scores (i.e. raw reading scores) for grades 7 to 9 were obtained from the Canadian Tests of Basic Skills (CTBS). Since CTBS score weren't available, academic achievement for grades 10 and 11 was determined from rankings of the students provided by the language arts teacher.

As shown in Table 5, the results indicate a higher correlation between academic self-concept and academic achievement for grades 7-9 compared to grades 10-11. The reverse can be seen for the correlations between general

self-concept and academic achievement.

At the $p < .05$ level of significance for critical values of the correlation coefficient, neither group was statistically significant. Thus, hypothesis three (a) was accepted, although the results are not significant. Hypothesis three (b) was rejected.

Table 5

Correlation between academic achievement (AA) and both academic and general self-concept for grades 7-9 and grades 10-11

	Grades 7-9 (AA)	Grades 10-11 (AA)
Academic Self-Concept	0.115	0.087
General Self-Concept	-0.132	-0.320
	n=60	n=10

* $p < .05$; ** $p < .01$

The fourth hypothesis tested was that school attendance would positively correlate with academic achievement.

In order to test hypothesis 4, attendance records for each student were obtained from their teachers. The total number of days absent was correlated with their academic achievement.

The results of the correlation between attendance and academic achievement are shown in Table 6.

Table 6

Correlation between academic achievement (AA) and attendance for grades 7-9 and grades 10-11

	Grades 7-9 (AA)	Grades 10-11 (AA)
Attendance	-0.109	0.275
	n=60	n=10

*p < .05; **p < .01

The correlations are low but nevertheless, in the case of the grade 7 to 9 group, positive. This contrasts with grades 10 to 11 where the correlation is negative. (Recall that number of days absent was correlated with academic

achievement). At the $p < .05$ level for critical values of the correlation coefficient, neither correlation was statistically significant. Thus, hypothesis four is accepted for grades 7 to 9 and rejected for grades 10 and 11.

The fifth hypothesis tested was that the socioeconomic status (SES) of the students would positively correlate with academic achievement, i.e. the higher the SES of the student, the higher his/her academic achievement.

Results of the correlation of both groups are shown in Table 7.

At the $p < .05$ level of significance, the correlations are not significant for either group. Recalling that SES was

Table 7

Correlation between academic achievement (AA) and SES for grades 7-9 and grades 10-11

	Grades 7-9 (AA)	Grades 10-11 (AA)
Socioeconomic Status	0.056	0.345
	n=60	n=10

* $p < .05$; ** $p < .01$

coded as High = 1, Middle = 2, and Low = 3, negates the positive correlations reported in this table. Thus, hypothesis five is rejected.

The sixth hypothesis tested was that SES would positively correlate with (a) academic self-concept and with (b) general self-concept.

The results of hypothesis 6 are shown in Table 8. Again, recalling the method of coding SES negates the negative signs in Table 8. At the $p < .05$ level of significance for critical values of correlational coefficients these correlations are not statistically significant. However, hypothesis six is still accepted.

Table 8

Correlation between SES and both academic and general self-concept for grades 7-9 and grades 10-11

	Grades 7-9	Grades 10-11
	SES	SES
Academic Self-Concept	-0.192	-0.517
General Self-Concept	-0.244	-0.039
	n=60	n=10

* $p < .05$; ** $p < .01$

Predictors of Academic Achievement

It was noted in the literature review presented in chapter 2, that academic self-concept, attendance, and socioeconomic status have all been known to be predictors of academic achievement. However, general self-concept has not been demonstrated to be a useful predictor.

A stepwise multiple regression analysis was used to explore the relationships between the independent variables (academic self-concept, general self-concept, attendance, and socioeconomic status) as predictors of academic achievement (hypothesis # 7).

The regression analysis for the grade 7 to 9 group produced $R^2 = 8.8\%$ ($F = 1.322$, $p > .05$), which does not achieve statistical significance.

The regression analysis for the grade 9 and 10 group produced $R^2 = 60.8\%$ ($F = 1.935$, $p > .05$), which is also not statistically significant.

Hence, these independent variables are not significant predictors of academic achievement for this sample and hypothesis seven was rejected.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

Discussion

The purpose of this study was to investigate the correlational relationships between attendance, general self-concept, academic self-concept, socioeconomic status, and academic achievement. A secondary interest was the predictability of academic achievement by the other variables.

This chapter focuses on a discussion of the results of this investigation and concludes with suggestions for future research in Native education.

Academic Achievement Measure

The results from the Kruskal-Wallis Analyses revealed no difference between the academic achievement reading scores of the grades within the two groups.

This lack of statistical significance may be an indication that the measure of academic achievement does not

discriminate between these grades or is a reflection of teacher instruction prior to standardized testing.

In addition, unique characteristics of the population may be contributing to these results. For example, it was found that reading levels among the grades 7 and 8 students ranged from 3 to 8 for both grades. As a result, the Kruskal-Wallis procedure may not be able to distinguish between the grades.

Correlational Relationships among the Variables

The Michigan State General Self-Concept of Ability Scale evaluated the students' academic self-concept (ASC).

The Piers-Harris Children's Self-Concept Scale investigated the students' general self-concept (GSC).

Hypothesis 1. The results showed that there was no statistically significant difference between ASC and grade level.

Hypothesis 2. The results also showed that there was no statistically significant difference between GSC and grade level.

The conclusion here is that due to the dropout rate among these students and due to the fact that a number of

students leave the community each year to attend high school in larger centres, the scales were unable to differentiate between the self-concepts of the students who remained in the school, although research has shown that self-concept is altered gradually as a student moves through adolescence (Beane, Lipka, & Ludewig, 1980; Hoge, Smit, & Hanson, 1990; Marshall, 1989; Pepper & Henry, 1991).

Hypothesis 3. The results of this investigation also revealed that there was no statistically significant relationship between academic self-concept and academic achievement, nor between general self-concept and academic achievement.

It appears that dropping out begins earlier than was anticipated at the start of this study. Perhaps the academic achievement abilities of the students who remained in school in conjunction with their cultural differences from non-Natives, negates the appearance of differences between these variables. In addition, the students who have not dropped out have similar self-concepts in relation to their academic abilities.

Hypothesis 4. This study showed a lack of statistical significance between attendance and academic achievement. This lack of significance may be due to the small sample

size obtained for the grade 10 and 11 students, and may be indicative of students' efforts to complete their academic work even when absent from school for the grade 7 to 9 students.

Hypotheses 5 & 6. The finding of no statistically significant correlations between socioeconomic status (SES) and academic achievement, nor between SES and both academic and general self-concept, is probably related to the method of determining the SES of the students.

The SES was actually accessed as the form of employment or the source of income held by the parent/guardian of the student. Perhaps this view of SES (the community member), is not held by the students themselves, and therefore, does not affect their academic achievement or their self-concepts (Chapman, Lambourne, & Silva, 1990).

Hypothesis 7. The lack of finding any of the variables to be predictors of academic achievement is not surprising since the correlational results revealed almost no statistically significance.

A research result not included within the hypotheses need to be highlighted.

The lack of a statistically significant correlation was found between academic self-concept and general self-concept

for the grade 10 to 11 group. Actually, a zero correlation was found. This is contrary to the expectations of the literature. Perhaps this result more than any other emphasizes the need for a Native model of self-concept.

There are several possible explanations for the results found in this study.

One reason may be the exposure of the students to Native role models. Most of the staff at the school are Native and original residents of the community. Their presence may be providing the role models with which some of the students are identifying. As Parry (1982) points out, "A cohesive ethnic group identity, though it may be devalued by the dominant culture, may be a major stabilizing factor in the formation of a positive self-concept" (p. 21).

A second reason may be that the students who have remained in school have more stable self-concepts than those who have already dropped out.

A third reason concerns the sample sizes for each grade. Sample sizes decreased as grade level increased. This may have limited or skewed the results of the self-concept scales for this sample because of the probability of both a higher ASC and GSC in the students who have remained in school.

A fourth reason pertains to the difficulties in measuring psychological constructs. Brookover et al., (1967) defines academic self-concept as a behavior that can be measured through a self-report instrument. However, Combs (1984), cited in Wall (1991), argues that self-concept is not a behaviour. "He defined self-concept as a perceptual organization which generated behaviour only as a symptom of itself. His contention was that while self-report is a behaviour affected by self-concept, it could not be accepted as being identical with it" (Wall, 1991, p. 46).

A fifth reason concerns the nature of the self-report instrument. Results are affected by such things as (1) the relationship of the student and researcher; (2) the willingness of the student to cooperate; (3) the student's comprehension of the questions; and (4) the student's emotional state (Wall, 1991). Parry (1982) aptly sums: "An individual's reporting of his assessment of his own self-awareness may easily be faked, or may fluctuate depending on conditions at the time of testing....In the final analysis one can only have what an individual is willing to reveal about himself, which may or may not be how he sees himself" (p. 13).

Predictors of Academic Achievement

The sample size in this study proved to be a factor in the running of a stepwise multiple regression analysis. The original sample had to be divided into two groups due to the assessment of academic achievement.

The choice of variables and the influence of unknown variables contributed to the lack of statistically significant results of the multiple regression.

It may be that the variables chosen for this study, although supported by the literature, do not have the same influence within a Native context. Perhaps there are other variables influencing these relationships. For example, parental and/or teacher expectations as perceived by the students.

Limitations of the Study

The limitations of the study are as follows:
The study used standardized tests with a population for which they have not been normed. The effect of this limitation was controlled by comparing students in the study only with each other. Students were not compared to the norm

group, or with any other students outside of the population.

It was not possible to randomly select students because of the small population and logistic considerations. Furthermore, the use of self-report data was limited to the willingness of the subjects to participate.

Generalization is limited since this study focused on a specific school and a specific community.

Conclusion

The results of this study have demonstrated that there are few significant correlational relationships among these variables for this sample. It may be that there are other variables operating in this forum that were not included in this research. In addition, the accuracy or sensitivity of the instruments must be taken into consideration, since a part of the data was collected from existing records (i.e. attendance and reading scores).

The suggestion to continue Native educational research cannot be overstated.

Recommendations

The following suggestions for future research with Native students are presented as a result of this study:

1. A study is needed to determine if there is a statistically significant relationship between academic self-concept and academic achievement, using the results of an entire standardized achievement test, standardized reading scores, and teacher assigned grades, of Native students. Consideration must be given to the sample sizes, i.e. $n > 30$, for each grade in such a study. Since there is no research providing support for a strong positive relationship between these two variables within a Native context, any meaning as to the significance of these variables in Native education is presently inapplicable. Madak (1988) aptly sums, "...without knowing the importance of the relationship, one cannot make decisions as to how much time, energy, or money to invest in trying to improve self-concept with the hope that academic achievement will follow" (p. 8).

The importance of this relationship can be seen in connection to the dropout rate among Native students. As indicated in the literature review, a student's self-concept

is not only related to his/her attendance, but becomes increasing a factor in whether or not that student views school as a place that is of value to him/her and worth investing time in.

2. More evidence is needed to support the notion of the effect of parental socioeconomic status on academic achievement and on self-concept among Native students. Previous research indicates that a relationship does exist between these variables within non-Native cultures (Barnes & Vulcano, 1982; Chapman, Lambourne, & Silva 1990). Perhaps the communal nature of Native culture negates the effect of this variable within the academic achievement of the students. Further investigation into this communal nature would perhaps shed light on other facets of education within the Native culture, now perceived as important within a non-Native context. An investigation of this type may also reveal aspects of the educational process that are unique to Native culture.

4. Some of the variables involved in this research are accumulative. Academic self-concept, general self-concept, and academic achievement fit into this category. Socioeconomic status is relatively constant and attendance fluctuates. Hence, it is suggested that teaching

effectiveness can be added to the list of factors which need to be investigated in future research.

5. Another recommendation involves looking at attendance patterns. In this study, no consideration was given to which days of the week students were absent. As indicated in the literature review (see chapter two), this pattern may have an effect on academic achievement and should be part of any future research in this area.

6. A final recommendation concerns use of the attribution paradigm in further research. The suggestion here would be to focus on the 'locus of control' for students in future studies.

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Appendix 1

SELF-CONCEPT OF ABILITY--GENERAL

(FORM A)

Michigan State University
Bureau of Educational Research

Circle the letter in front of the statement which best answers each question.

1. How do you rate yourself in school ability compared with your close friends?

- a. I am the best
- b. I am above average
- c. I am average
- d. I am below average
- e. I am the poorest

2. How do you rate yourself in school ability compared with those in your class at school?

- a. I am among the best
- b. I am above average
- c. I am average
- d. I am below average
- e. I am among the poorest

3. Where do you think you would rank in your class in high school?

- a. among the best
- b. above average
- c. average
- d. below average
- e. among the poorest

4. Do you think you have the ability to complete university?
- a. yes, definitely
 - b. yes, probably
 - c. not sure either way
 - d. probably not
 - e. no
5. Where do you think you would rank in your class in university?
- a. among the best
 - b. above average
 - c. average
 - d. below average
 - e. among the poorest
6. In order to become a doctor, lawyer, or university professor, work beyond four years of university is necessary. How likely do you think it is that you could complete such advanced work?
- a. very likely
 - b. somewhat likely
 - c. not sure either way
 - d. unlikely
 - e. most unlikely

7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is?

- a. my work is excellent
- b. my work is good
- c. my work is average
- d. my work is below average
- e. my work is much below average

8 What kind of grades do you think you are capable of getting.

- a. mostly A's
- b. mostly B's
- c. mostly C's
- d. mostly D's
- e. mostly F's