THE UNIVERSITY OF CALGARY

A Model of Achievement: A Study of Individual, Family and Social Factors

by

Laura Quilliams

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

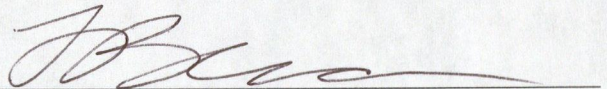DEGREE OF MASTER OF SCIENCE

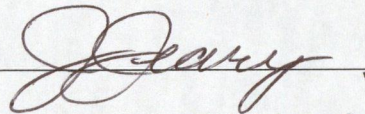DIVISION OF APPLIED PSYCHOLOGY

CALGARY, ALBERTA

SEPTEMBER, 2007

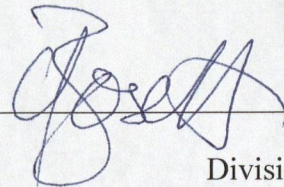UNIVERSITY OF CALGARY

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "A Model of Achievement: A Study of Individual, Family and Social Factors" submitted by Laura Quilliams in partial fulfillment of the requirements for the degree of Master of Science in Applied Psychology.

Supervisor, Dr. Tanya Beran
Division of Applied Psychology
Faculty of Education

Dr. Joan Jeary
Division of Applied Psychology
Faculty of Education

Dr. Lynn Bosetti
Division of Teacher Preparation
Faculty of Education

September 19, 2007
Date

ii

ABSTRACT

The purpose of the present study was to determine whether individual (i.e., academic motivation and self-concept), family (i.e., parental involvement in education) and social (i.e., peer victimization) factors are related to the academic success of elementary students. The sample consisted of grades five and six students ($n = 148$) and their teachers ($n = 21$) from schools in Calgary, Alberta. Academic achievement was measured by students' most recent school grades, as well as teachers' perceptions of overall achievement. Level of self-concept, academic motivation, parental involvement in education, and frequency of peer victimization were reported by students and teachers. Peer victimization was not significantly related to students' academic achievement or the achievement related variables. The individual and family factors related to achievement were included in a latent variable path model. The model fit the data well (Comparative Fit Index = .94) and converged in ten iterations, with a standardized residual mean error of .02, χ_2 (9) = 34.37, $p < .000$. The model indicates that students with low parental involvement in their education may exhibit a low sense of competence and motivation towards learning, and achieve minimal academic success. Results of the present study are discussed in accordance with Eccles' Expectancy-Value Theory and Model of Achievement-Related Choices (Eccles et al., 1983; Eccles, 1994).

ACKNOWLEDGMENTS

The completion of this thesis would not have been possible without the support of many family members, friends, and colleagues. First, I would like to thank my thesis supervisor, Dr. Tanya Beran, for her wisdom, encouragement and kind words. Thank you for your endless patience and assistance, and I have gained considerable knowledge in the areas of bullying, achievement, and statistics. You have been an amazing role model throughout my graduate program. I greatly admire your ambition and accomplishments, as well as your positive outlook on life. I think our trip to "Ottawa" will bring a smile to my face for years to come!

I would also like to thank Dr. Joan Jeary and Dr. Lynn Bosetti for participating in my examining committee. I appreciate your wisdom, experience and professionalism, and your contribution to my thesis.

This project was supported by the Social Science and Humanities Research Council of Canada (SSHRC) granted in 2006. I would like to thank the Council for their ongoing support.

I am also thankful for the love and support I have received from family and friends. Your endless encouragement and optimism, even when I doubted myself, was greatly appreciated. Mom and dad, thank you for always supporting my goals and trusting my judgment. I am forever grateful for your unconditional love. Thanks to all my friends in School Psychology who kept me motivated and focused on my thesis, and thanks to my friends elsewhere who provided me with endless amounts of laughter, love, and support.

I would also like to thank my husband, Nick, whose endless love, support, understanding, and humor inspired me in countless ways. Thank you for selflessly encouraging me to put my work first and waiting so patiently for me to find time for you. Nick, you are my best friend and I am so happy to be embarking on our next journey in life together!

Lastly, I would like to thank all of my professors at the University of Calgary who inspired me to become a competent, intelligent, and ethical school psychologist. Thank you for all the advice, support and wisdom throughout the program. Your time, effort, and expertise are invaluable.

DEDICATION

To the children, families, and staff of Hull Child and Family Services who helped me become the person I am today, and inspired me with endless amounts of laughter, love, and support.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Canada has experienced an increase in the number of students with risk factors that may compromise their present achievement and future academic success (Wood, Dewit, Rye, & Stevens, 2000). Furthermore, high rates of school drop out are prevalent in all provinces, ranging from 17% in New Brunswick to 30% in Ontario (King, Warren, Boyer, & Chin, 2005). Students who drop out of school are at-risk for numerous problems in adolescence and adulthood and may ultimately pose a burden on society. Indeed, low achievement and school drop out rates are associated with high societal costs such as high rates of unemployment, welfare dependency, and criminal behavior (Anderson, Christenson, & Lehr, 2004). Clearly there is a need to examine the protective and risk factors that influence students at-risk for academic failure.

A substantial amount of research has investigated the process of academic achievement and identified numerous protective and risk factors that impact students' success in school. Factors that influence academic achievement range from microsystems (e.g., individual characteristics) to large macrosystems (e.g., family, school or societal contexts). Specific factors may include: 1) individual characteristics such as intelligence, disabilities, behavioral problems, depression, motivation or self-worth; 2) family factors may involve parenting styles, parental involvement, family cohesion or socio-economic status; 3) peer factors may include peer rejection or victimization; 4) school factors may include class size or teacher expectations; and 5) community factors may involve poverty, community supports or stereotypes.

Understanding the impact each context has on students' academic achievement and level of risk is an important topic for researchers in educational psychology. Indeed, there is a need

to simultaneously examine these influences and the collective impact they have on students' academic achievement. Most research studies that have attempted to simultaneously investigate multiple factors that are related to achievement have been conducted outside of Canada. Therefore, generalization of these studies is limited due to cultural, social, demographic and educational differences that exist among countries (Boulton, Bucci, & Hawker, 1999). As a result, little is known about the interrelationships among the multiple factors that are related to Canadian students' academic achievement.

<div align="center">Factors Related to Achievement</div>

The present study examined the relationship among academic achievement and individual, family, and social factors. Specifically, academic motivation, self-concept, parental involvement in children's education, and peer victimization are examined as potential correlates of academic achievement.

Academic motivation has been shown in some studies to predict children's achievement in school (Boggiano et al., 1992; Broussard & Garrison, 2004; Goldberg & Cornell, 1998; Gonzalez-Pienda et al., 2002; Gottfried, 1985, 1990, 2001; Weiner, 1985). However, Stipek and Ryan (1997) found no relation between classroom motivation and achievement in young children. Thus, the findings of previous studies are not conclusive in demonstrating the association between academic motivation and achievement in elementary students and further investigation is warranted.

In addition to academic motivation, self-concept has been found to be predictive of students' academic success. In a meta-analysis, Valentine, DuBois, and Cooper (2004) found a positive and reciprocal relation between self-beliefs and academic achievement, which is generally held across age, gender, and cultural background. Furthermore, academic self-

concept had a greater influence on academic achievement than general beliefs about the self. Thus, children with a high level of self-concept often achieve academic success, particularly if they exhibit positive beliefs about their academic competence (Anderman, Anderman, & Griesinger, 1999; Chemers, Hu, & Garcia, 2000; DuBois, Felner, Bran, & George, 1999; Goldberg & Cornell, 1998; Guay, Boivin, & Hodges, 1999; Guay et al., 2003; Gonzalez-Pienda et al., 2002; Marsh, Kong, & Hau, 2000; Skaalvik & Valas, 1999; Yeung & Lee, 1999). To gain a broad understanding of how students' self-beliefs influence their academic success, further investigation is needed to simultaneously examine the relation among self-concept, achievement and other achievement-related variables.

The level of parental involvement in a child's education may also impact the level of academic success the child experiences. In a meta-analysis, Jeynes (2005) found a positive association between parental involvement and academic achievement, which is generally held across age, gender, culture background, and situations. Thus, the extent to which parents actively promote learning in the home, and have direct and regular contact with school has a positive impact on students' academic achievement (Bean, Bush, McKenry, & Wilson, 2003; Englund et al., 2004; Fantuzzo, Davis, & Ginsburg, 1995; Keith et al., 1998; Marchant, Paulson, & Rothlisberg, 2001; Marcon, 1999; McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Miedel & Reynolds, 1999; Miliotis, Sesma, & Masten, 1999).

Although many researchers have found a positive link between parental involvement and academic achievement, the direction of this relation is not clear. Some longitudinal research suggests that students' previous achievement is predictive of parental involvement in their education (e.g., Shumow & Miller, 2001). For instance, parents may participate more in a child's education when the child is performing well in school and has set future academic

goals. On the other hand, some studies have found no evidence of a direct relationship between parental involvement and school achievement (e.g., Bobbett, French, Achilles, & Bobbett, 1995; Fan, 2001; Okpala, Okpala, & Smith, 2001). Thus, parents may be indirectly involved in their child's achievement, whereas students may have a more direct influence on their own academic success. Given these inconsistent findings, further investigation is warranted to gain a broad understanding of the relationship between parental involvement and academic achievement.

In addition to academic motivation, self-concept and parental involvement, peer victimization may be a predictor of children's performance in school. Many researchers have linked peer victimization to low academic achievement (Buhs et al., 2006; Graham, Bellmore, & Juvonen, 2003; Juvonen, Nishina, & Graham, 2000; Lopez & DuBois, 2005; Nishina, Jovonen, & Witkow, 2005; Paul & Cillessen, 2003; Schwartz, Chang, & Farver, 2001; Schwartz, Gorman, Nakamoto, & Toblin, 2005). However, a notable exception is a longitudinal study conducted by Hanish and Guerra (2002) who found no direct relation between peer victimization and academic adjustment in elementary students. Rather, high levels of social-emotional and behavioral problems (i.e., aggression, attention problems, delinquency, anxiety, depression, and withdrawal) mediated the relationships between victimization and academic achievement. Thus, the findings of Hanish and Guerra (2002) suggest that bullied children may experience low academic achievement when they perceive low social support and are struggling with additional adjustment problems. Conversely, Woods and Wolke (2004) offered an alternative explanation of similar achievement levels between victims and non-victims. The authors proposed that victims actually increase their academic abilities by focusing more on schoolwork as a method of escaping victimization. Due to

inconsistent findings and the complex association between peer victimization and achievement, further investigation is needed to examine the relationship among bullying, achievement and other achievement-related variables.

When developing a research study, it is advantageous to use a sound theoretical model to guide the hypotheses and research questions. Jacqueline Eccles and her colleagues have developed a comprehensive framework of achievement, which incorporates social, emotional, and academic factors that impact a child's school performance. Indeed, Eccles' Expectancy-Value Theory and Model of Achievement-Related Choices is the most comprehensive theoretical model of achievement to date (Eccles et al., 1983; Eccles, 1994). As Eccles' theories of achievement provide a current theoretical understanding for the present study, this framework will be used to guide an empirical model of achievement for elementary students.

To simultaneously examine numerous factors related to achievement, the use of structural equation modeling (SEM) in educational research is advantageous over other statistical procedures. Indeed, the use of SEM provides more stable, accurate measures of the effects of one variable on another, the ability to model reciprocal causation, correlated errors of measurement and calculate both direct and indirect effects of latent variables (Reynolds & Gutkin, 1998). Thus, the present study will analyze data from students' and teachers' reports through the use of structural equation modeling (SEM) to build an empirical model of academic achievement, based on individual, family and social factors.

In summary, the relationship among individual, family and social influences on academic achievement were examined. It was expected that children who obtain high levels of achievement are unlikely to experience bullying, and likely to exhibit a sense of competence

and motivation towards learning. In addition, it was hypothesized that children who experience high parental involvement in their education are likely to obtain high levels of achievement.

Statement of the Problem

Rooted in Eccles' theories of achievement as well as the aforementioned rational, the purpose of the present study was to examine the relationship among academic motivation, self-concept, parental involvement, peer victimization, and academic achievement. Through the use of SEM, a model was developed and tested.

The proceeding chapter provides a review of the relevant research on various factors related to academic achievement. Chapter three includes a description of participants, data collection, and measures used in the present study, as well as the procedures utilized to develop a statistical model. Chapter four outlines the results of the analyses and details of the model of achievement. Lastly, chapter five contains a discussion of the results in relation to previous research and theories of achievement, as well as the limitations of the present study and implications for future research, interventions and policy.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews research on the relationship among academic achievement and individual, family and social factors. Specifically, academic motivation, self-concept, parental involvement in children's education, and peer victimization are examined as potential correlates of academic achievement. First, academic achievement is reviewed followed by factors related to achievement. Next, the analytic method known as structural equation modeling is discussed as a means of analyzing multiple relationships among factors related to achievement. The chapter will conclude with an outline of the specific research questions addressed in the present investigation.

Academic Achievement

The following section provides an overview of the definition of academic achievement, as well as a description of methods of measuring achievement. In addition, I will present an overview of achievement theories, specifically Eccles' Expectancy-Value Theory and Model of Achievement-Related Choices.

Defining Academic Achievement

There is considerable variability in how researchers define academic achievement, and there does not appear to be a consistent definition of the concept in the research. Indeed, the definition of achievement varies depending on the population studied and measures used. For instance, Broussard and Garrison (2004) defined achievement as "that which is accomplished by the actual execution of class work in the school setting" (p. 13). Other researchers define achievement as a student's comprehensive understanding of information and proficiency with specific skills (Ebel & Frisbie, 1986). Certainly, many researchers have used school grades to

represent specific skill development (e.g., Englund, Luckner, Whaley, & Egeland, 2004; Hanish & Guerra, 2002; Nishina, Juvonen, & Witkow, 2005). In addition, the terms academic achievement, academic performance, academic adjustment and academic success have been used interchangeably in the research, and there is no clear distinction among these concepts (Barnard, 2004; Gonzalez-Pienda et al., 2002; Jeynes, 2005). For the purpose of this investigation, academic achievement was defined in terms of the child's overall understanding of particular information and development of specific skills within the school setting. Indeed, many achievement tests measure student learning from instruction on the basis of performance of basic skills (Wilson, 1989).

Methods of Measuring Achievement

The method of measuring academic achievement also varies considerably in the research. The most commonly reported indicator of achievement is rate of high school graduation (Magdol, 1992). Other common measures include grades or grade point averages (GPA), standardized achievement test scores, teacher and parent ratings, as well as school attendance, homework completion, grade retention and suspensions (Englund et al., 2004; Gottfried, Gottfried, Cook, & Morris, 2005; Jeynes 2005). It is important to note that standardized intelligence tests are rarely used in the achievement literature, as they vary systematically with academic achievement and many researchers are interested in examining the link between other variables and achievement, independent of intellectual ability (Gonzalez-Pienda et al., 2002; Luster, Lekskul, & Oh, 2004).

Teacher ratings are another method of measuring academic achievement and are based on teachers' perceptions of the students' academic performance. According to Englund et al. (2004) "compared with standardized achievement test scores, teachers' ratings of performance

may be a more accurate and sensitive measure of children's actual classroom achievement" (p. 725). Indeed, teacher reports of achievement have been used in many research studies and are considered the preferred method of measuring achievement by some researchers (Englund et al., 2004; Jeynes, 2005). One reason is that teacher ratings provide an indication of academic achievement across various grading systems that may be used in schools (e.g., letter grades, GPA or qualitative ratings). Moreover, research indicates that teacher ratings of achievement correlate with and accurately predict school grades (Jeynes, 2005). For these reasons, teacher ratings are considered to be an accurate and reliable measure of academic achievement, and thus, were used in the current investigation. In contrast, research indicates that children inaccurately report academic achievement, and often report more positive and optimistic results compared to teachers (Alexander & Entwistle, 1988; Howse, Lange, Farran, & Boyles, 2003). Thus, children's perceptions of their own achievement were not utilized in the present study.

In contrast to teacher ratings, standardized achievement tests compare an individual's score against the scores of a group of same age peers that have completed the same test. The questions on these tests mainly reflect the content of textbooks that are used nation wide, and not necessarily the local curriculum. School grades, on the other hand, are based on the local curriculum and represent children's daily learning in the classroom setting. The present study also utilized children's most recent school grades as a method of measuring academic achievement.

Eccles' Theories of Achievement

A theoretical framework is also necessary to define academic achievement. Eccles' Expectancy-Value Theory and Model of Achievement Related Choices is based on over 20

years of research and is the most comprehensive theoretical model of achievement to date

(Anderman et al., 2001; Denissen, Zarrett, & Eccles, 2007; Durik, Vida, & Eccles, 2006;

Eccles et al., 1983; Eccles, 1994; Fredricks & Eccles, 2002; Fredricks & Eccles, 2005;

Freedman et al., 2000; Frome, Alfeld, Eccles, & Barber, 2006; Jacobs, Lanza, Osgood, Eccles,

& Wigfield, 2002; Jacobs, Vernon, & Eccles, 2004; Sheldon & Eccles, 2005; Simpkins, Davis-

Kean, & Eccles, 2006; Wigfield & Eccles, 2000). The framework features the interrelationship

between a variety of contexts (social and psychological) on an individual's development and

achievement. A detailed explanation of Eccles' framework in relation to the current

investigation is discussed below.

Eccles' Expectancy-Value Theory. Eccles and her colleagues have developed and assessed

a comprehensive model that attempts to explain children's choices, motivation, and

performance on achievement tasks (Denissen et al., 2007; Eccles et al., 1983; Simpkins et al.,

2006; Wigfield, 1994; Wigfield & Eccles, 1992). Eccles' Expectancy-Value Theory proposes

that children's beliefs about how well they can perform an activity and the extent to which they

value the activity will guide their choices and performance on tasks. In turn, children's

personal expectations and values are influenced by social cognitive variables such as task-

specific beliefs (e.g., perceptions of task difficulty, personal goals, and self schema). These

social cognitive factors are created and influenced by the child's interpretations of previous

achievement results, others' attitudes and expectations of them, and their memories of similar

tasks (Eccles et al., 1983; Wigfield & Eccles, 1992). In other words, how a child perceives an

achievement task is influenced by the broader social context, as well as individual beliefs,

behaviors and past experiences of success and failure.

The value component of the framework claims that children's perceptions of how important the task is, as well as the costs (both emotional and physical), guide the degree of achievement accomplished (Eccles et al., 1983). According to Eccles and her colleagues, attainment (the importance of doing well), intrinsic value (the enjoyment from doing the task), usefulness (how a task fits into future plans) and costs (how one activity limits access to other activities, as well as physical and emotional effort needed to accomplish the task) all influence motivation to achieve.

Self-efficacy is also an important component of the Expectancy-Value theory. Self-efficacy refers to an individual's belief that he or she can accomplish a task and succeed in reaching a specific goal (Wigfield & Eccles et al., 2000). Individuals with high levels of self-efficacy recover quickly from failure or setbacks, and approach tasks with a commitment to learn and succeed. Conversely, individuals with low levels of self-efficacy view challenging tasks as threatening or unmanageable, give up quickly when the demands increase, and attribute their failure to personal inadequacies. According to Eccles' theory, self-efficacy judgments guide an individual's decision-making and value of achievement tasks (Denissen et al., 2007; Parjares et al., 1999). Thus, individuals who expect to be successful in a particular task tend to value and engage in those tasks. For the present investigation it could be argued that when children are faced with various disadvantages, such as low parental involvement and peer victimization, this may erode their sense of self-efficacy and, therefore, reduce their motivation to learn and succeed in school.

Eccles Model of Achievement-Related Choices. Eccles and her colleagues further elaborated upon the Expectancy-Value Theory to develop a Model of Achievement-Related Choices (Eccles, 1994). The model states that an individual's achievement-related choices,

whether in education or career, are related to two sets of beliefs: their expectations for success, and their perceptions of the various options available. These beliefs are formed by cultural norms (cultural milieu, gender, social stereotypes, and so on) and individual experiences and ability. Consequently, the relative value (both personal and cultural) and the probability of success of various options are key influences in achievement-related choices, including which courses to take, what careers to seek, and what recreational activities to pursue (Durik et al., 2006).

According to Eccles' Model of Achievement-Related Choices (Eccles, 1994), ten characteristics at cultural and individual levels interrelate simultaneously to determine children's achievement choices. 1) Society or a child's cultural milieu involves norms and expectations regarding appropriate choices for an individual in terms of gender, age, ethnicity, and so on; 2) The particular social beliefs and behaviors of influential people, such as parents and teachers, will also impact a child's perceptions of the various options available; 3) Also a child's own perception of cultural norms or societal expectations regarding gender roles and stereotypes impacts their view of available options and the activities they choose to engage in; 4) A child's confidence or beliefs in their own ability, skills, and talents influence the choices they make; 5) These beliefs have been shaped over time by a child's experiences with the subject matter, and whether they achieved success or failure; 6) A child's perception or subjective interpretation of these experiences influence achievement choices. For instance, a child may perceive that the successes are a consequence of hard work rather than high ability; 7) A child's affective memories of experiences also impact their perception of available options and the choices they make. For example, a child may feel frustration and anger towards mathematics, whereas they may associate feelings of joy and happiness with art class; 8) A

child's goals and general self-schemata impact achievement choices. That is, a child may make particular achievement-related choices depending on their short- and long-term goals. Additionally, a child's perception of personal competence and the demands of the tasks will influence whether they perceive a task to be an available option and choose to engage in the activity; 9) Given the aforementioned factors, a child will have expectations of whether or not he/she can achieve success. Children are likely to engage in a task if they perceive they can be successful; and 10) The task value, the utility and usefulness of the task, as well as the cognitive, emotional and physical cost of the task also determines whether a child invests in a particular activity (Eccles, 1994). The model claims that a combination of these factors will determine whether a child will be motivated and persistent to achieve in school.

In summary, Eccles' Expectancy-Value Theory (Eccles et al., 1983) and Model of Achievement-Related Choices (Eccles, 1994) provide a practical theoretical framework for the present study. According to the theories, achievement involves the cultural, social, and environmental "fit" of schools for students. At school, students progress into wider social contexts from their homes, which influence their cognition, behavior, and socio-emotional development (Eccles, Roeser, Wigfield, & Freedman-Doan, 1999). Within the school environment students have new life experiences as they are encouraged and challenged in their intellectual and interpersonal development. Students who experience academic and social difficulties may become frustrated, resulting in a negative pattern of adaptation towards school (Eccles, et al., 1999). Thus, academic success is dependent on developing a positive view of one's level of competence and a positive orientation to learning. By using Eccles' Expectancy-Value and Achievement-Related Choices theories, the present investigation will examine

multiple factors related to achievement and determine which factor or combination of factors are most closely related to academic achievement.

<div align="center">Factors Related to Academic Achievement</div>

Current research and Eccles' theories of achievement suggest that children's academic performance is influenced by multiple factors. Several of these factors may include academic motivation, self-concept, parental involvement in education, and peer victimization. These factors are examined in detail below.

Academic Motivation

Academic motivation refers to a student's enjoyment of learning characterized by an orientation toward mastery, curiosity, persistence, and the learning of challenging, difficult, and novel tasks (Gottfried et al., 2005). The terms academic motivation, classroom motivation, achievement motivation, learning motivation and academic intrinsic motivation are used interchangeably in the research, and there is no clear distinction among these concepts. For the purpose of this investigation, academic motivation will refer to a children's general enjoyment of learning, as well as their curiosity and persistence towards challenging and novel academic tasks.

There has been little empirical investigation on the association between academic motivation and achievement, and the minimal research that has been conducted shows inconsistent results. For instance, Stipek and Ryan (1997) found no relation between classroom motivation and academic achievement in young children. Conversely, in a series of studies on elementary and middle school students, Gottfried (1985, 1990, 2001) demonstrated that students with high academic motivation have high academic achievement. Moreover, Gottfried found that early achievement predicted later academic motivation. In a subsequent study,

Gottfried (2005) also demonstrated that students who displayed gifted academic motivation performed in the superior range on achievement tasks. This positive association between academic motivation and achievement found by Gottfried and other researchers is consistent with Eccles' theories of achievement (Boggiano et al., 1992; Broussard & Garrison, 2004; Goldberg & Cornell, 1998; Gonzalez-Pienda et al., 2002; Weiner, 1985). Indeed, Gordon Rouse (2001) stated "In order for a student to be motivated it is important for them to have a goal, to believe they have the ability to achieve that goal, and to believe that the environment is facilitative of that goal" (p. 468).

The differences in research findings may be due, in part, to inconsistent methods of measuring academic motivation. That is, Gottfried used a single measure of academic achievement, whereas Stipek and Ryan (1997) used a diverse battery of motivational measures. Also Stipek and Ryan focused on the achievement of young children in kindergarten and the results, therefore, may not be generalizable to older elementary and middle school students. Indeed, Gottfried et al. (2001) found that students' academic motivation becomes more stable in adolescence in relation to the early elementary years. The findings of the review provide directions for future research, but are not conclusive in demonstrating the association between academic motivation and academic achievement in elementary students. Thus, the present study investigated the relationship between these two variables, as well as examining student self-concept, parental involvement in education, and peer victimization in relation to academic achievement. These additional individual, family and social factors are discussed in detail below.

Self-Concept

Self-concept and academic achievement. Self-concept is defined as a multidimensional and dynamic system of self-beliefs. These beliefs often refer to an individual's perceived competence within the domains of academics, physical appearance, athletics, social skills and family. Upon entry into elementary school, most children's self-perceptions are highly positive and their self-expectations are unrealistically optimistic (Bouffard, Marcoux, Vezeau, & Bordeleau, 2003; Cole et al., 2001; Gest, Domitrovich, & Welsh, 2005; Guay, Marsh, & Boivin, 2003). At this age, children typically claim that they are the "best in their class" (Cole et al., 2001). However, over the next several years feedback related to children's competence in various domains becomes more frequent, evaluations of children become increasingly performance based, criteria for success become more objective, and children's performances are often judged by comparison to peers (Bouffard et al., 2003; Cole et al., 2001; Gest et al., 2005; Guay et al., 2003). Furthermore, children's capacity and motivation for using more objective criteria and making social comparisons for self-evaluation also increases over time (Harter, 1998). As a result of these transitions, children discover they have relative strengths in some domains and weaknesses in others (Fredricks & Eccles, 2002; Freedman et al., 2000; Jacobs et al., 2002; Marsh, Craven, & Debus, 1998; Wigfield & Eccles, 1992). Thus, young children's very high self-concepts tend to become more realistic and more differentiated over time. Indeed, Marsh et al. (1998) found that children's self-ratings become more correlated with teacher ratings as children grow older.

Many researchers have found the later elementary school years to be a period of recovery. That is, the average level of children's self-concept increases and individual differences become increasingly stable (Bouffard et al., 2003; Cole et al., 2001; Denissen et al., 2007;

Guay et al., 2003). Thus, children's perceived competence in different domains becomes increasingly integrated into a more coherent system of self-beliefs. In turn, children learn to value and invest in activities in which they perceive themselves as relatively competent (Anderman et al., 2001; Denissen et al., 2007; Durik et al., 2006; Eccles et al., 1983; Simpkins et al., 2006; Wigfield et al., 1997), and learn to devalue activities in which they perceive themselves as less competent (Harter, 1985; Jacobs et al., 2002).

Academic achievement has been studied in relation to general self-concept and to domain-specific areas of perceived competence, such as academics. In a meta-analysis, Valentine et al. (2004) found a positive and reciprocal relation between self-beliefs and academic achievement, which is generally held across age, gender, and cultural background. Furthermore, academic self-concept had a greater influence on academic achievement than general beliefs about the self. Thus, children with a high level of self-concept often achieve academic success, particularly if they exhibit positive beliefs about their academic competence. (Anderman et al., 1999; Chapman, 1997; Chemers et al., 2000; DuBois et al., 1999; Felson, 1984; Goldberg & Cornell, 1998; Guay et al., 1999; Guay et al., 2003; Gonzalez-Pienda et al., 2002; Helmke & van Aken, 1995; Marsh et al., 2000; Marsh & Yeung, 1997; Skaalvik & Valas, 1999; Yeung & Lee, 1999; Zimmerman, Copeland, Shope, & Dielman, 1997). Considering the development of student self-concept during the elementary school years, it stands to reason that the relation between self-concept and academic achievement may become stronger as children grow older. Indeed, Guay et al. (2003) reported "as children grow older, their self-concept responses became more reliable, more stable, and more strongly correlated with academic achievement" (p. 133).

Self-concept and academic motivation. Similar to self-concept, several studies have demonstrated a decline in academic motivation that begins in the early elementary years (Bouffard et al., 2003; Gottfried et al., 2001; Harter, 1981; Nurmi & Aunola, 2005; Wigfield et al., 1997). Hence, the general decline in self-concept over the early school years is paralleled by a decline in motivation towards learning (Deci & Ryan, 1985; Harter, 1981; Obach, 2003; Skaalvick & Valas, 1999; Spinath and Spinath, 2005; Wigfield et al., 1997). In a longitudinal study, Spinath and Spinath (2005) found a strong link between elementary children's academic motivation and self-concept. Thus, children are motivated to learn and engage in challenging tasks in which they believe themselves to be competent. Correlations of a strong magnitude between motivation and perceived competence have previously been found in children at the end of elementary school or at the transition to middle school (e.g., Obach, 2003; Skaalvik & Valas, 1999). On the other hand, these associations tend to be weak to moderate in the first years of elementary school (Wigfield et al., 1997). Therefore, the degree of association between motivation and self-beliefs increases as children's reports of motivation and self-concept increase in stability over time.

In a similar vein, Jacobs et al. (2002) investigated the relation between children's self-concept and task values (the importance or value of a particular task). Students' perceptions of ability accounted for 40% of the decline in values across every academic domain in the early elementary years. Thus, changes in children's sense of competence explain a large percentage of their changing values for particular academic tasks (Jacobs et al., 2002). This finding supports Eccles' theories of achievement and is consistent with previous research suggesting that self-perceptions of competence are related to changes in value of an activity over time (Anderman et al., 2001; Harter, 1985; Simpkins et al., 2006; Wigfield & Eccles, 1992;

Wigfield et al., 1997). Therefore, children value and are motivated to pursue challenging academic tasks in which they perceive themselves to be competent.

The current investigation examined the association between self-concept and academic motivation, as well as parental involvement and peer victimization. In order to examine the degree to which these achievement-related factors were directly or indirectly related to self-concept, a multidimensional measure of student self-concept was utilized in the study. As well, the study examined the degree to which self-concept was related to achievement to gain a broad understanding of how students' self-beliefs influence their academic success.

Parental Involvement

Parental involvement in a child's academic development may be an important factor that impacts whether a child achieves academic success or failure. The current study investigated the interrelationships among parental involvement, academic achievement and self-concept to obtain a comprehensive understanding of factors that predict the learning outcomes of elementary students.

Parental involvement and academic achievement. The level of parental involvement in a child's education may influence the level of academic success the child experiences. In a meta-analysis, Jeynes (2005) found a positive association between overall parental involvement and academic achievement, which is generally held across age, gender, culture background, and situations. Thus, the extent to which parents actively promote learning in the home, and have direct and regular contact with school has a positive impact on students' academic achievement (Bean et al., 2003; Englund et al., 2004; Fantuzzo et al., 1995; Griffith, 1996; Keith, Keith, Cohen-Rosenthal, & Franzese, 1996; Keith et al., 1998; Mantzicopoulos, 1997; Marchant et

al., 2001; Marcon, 1999; McWayne et al., 2004; Miedel & Reynolds, 1999; Miliotis et al.,

1999; Shaver & Walls, 1998; Villas-Boas, 1998; Zellman & Waterman, 1998).

Although many researchers have found a positive link between parental involvement and

academic achievement, the direction of this relation is not clear. When examining longitudinal

data, some researchers have found that previous achievement predicts parental involvement

rather than the opposite (e.g., Shumow & Miller, 2001). For instance, children's poor academic

success may cause strain and stress on parents, which may result in less parental involvement

in children's education. Other researchers have found no evidence of a direct impact of

parental involvement on children's academic achievement, perhaps because parents are

involved indirectly in their child's learning and the students themselves have a more direct and

influential impact on achievement (e.g., Bobbett et al., 1995; Fan, 2001; Okpala et al., 2001).

These discrepant results may reflect, at least in part, varying definitions of parental

involvement in children's education. For instance, Gonzalez-DeHass, Willems, and Holbein

(2005) defined parent involvement as "parenting behaviors directed towards children's

education" (p. 101). Such behaviors may include participating in parent-teacher conferences,

school activities or functions, and assisting children with homework. On the other hand, Jeynes

(2005) defined parent involvement as "parental participation in the educational processes and

experiences of their children" (p. 245). Indeed, Jeynes (2005) found the most influential factors

of parental involvement to be the more subtle aspects involved in creating an educationally

oriented atmosphere, such as parental values and expectations of education. In light of an

inconsistent definition in the research, the current investigation utilized a multidimensional

construct of parental involvement and measured parenting behaviors, values, and expectations

of children's education.

Another important issue to consider in research examining the link between parental involvement and academic achievement is the source of parent involvement. That is, teacher, parent and student ratings have all been used. Some researchers have argued that student ratings are most appropriate because it is not the actual parental participation, but the child's perception of the participation that is most influential on later child outcomes (Keith, 1991). Thus, the present study examined students' ratings of perceived parental involvement in their education. As well, teacher ratings were included to validate the student's perception of parental involvement. Indeed, information pooled from two report sources is more reliable than from any single source (Cronbach, 1984).

Parental involvement and achievement-related variables. The link between parental involvement in children's education and other factors related to achievement such as academic motivation and self-concept has elicited few studies. For instance, Marchant et al. (2001) found a strong positive relation between elementary students' perceptions of their parents' values about achievement and their own academic motivation and competence. Thus, when students perceive that parents value effort and academic success, students are likely to display high academic competence and place a high priority on their academic ability, effort, and grades (Marchant et al., 2001). Fantuzzo et al. (1995) randomly assigned parents and elementary students to a control group and a parent intervention group. Parents in the intervention group were encouraged to have positive expectations about their child's academic effort and progress, as well as to respond to their child's efforts in a warm and enthusiastic manner. The researchers found that children of parents in the intervention group exhibited higher self-concept and academic motivation, compared to children in the control group. Thus, students who perceive their parents to be supportive and involved in their education are likely to enjoy learning and

feel competent in the pursuit of academic success (Fantuzzo et al., 1995). Indeed, Luster et al. (2004) stated "parents may provide encouragement for their children, help them develop perceptions of themselves as competent learners, and in a variety of ways convey to their children the importance they attach to learning" (p. 339).

The impact of parental involvement on factors related to achievement such as academic motivation and self-concept has received little attention in the research and was examined in the current study. This study also investigated the degree to which parental involvement was directly or indirectly related to achievement to obtain a broad understanding of children's school performance. In addition, the present study examined the link between peer victimization and academic achievement. Indeed, peer victimization may be an important risk factor that influences a child's learning in school.

Peer Victimization

Defining peer victimization. Peer victimization or school bullying has become recognized as a significant issue in schools worldwide (Cullerton-Sen & Crick, 2005; Espelage & Swearer, 2003; Smokowski & Kopasz, 2005). Students are bullied when they are unable to defend themselves against repetitive aggressive actions of their peers (Espelage & Swearer, 2003; Pereira, Mendonca, Neto, Valente, & Smith, 2004). Thus, bullying involves an interpersonal relationship with an individual or group of individuals characterized by an imbalance of power (Pereira et al., 2004; Smith et al., 2002).

Generally researchers identify four types of bullying, including physical aggression, verbal aggression, relational aggression, and intimidation (Smokowski & Kopasz, 2005). Physical aggression is a direct form of bullying, and involves pushing, hitting, stealing, and inflicting bodily harm (Nansel et al., 2001; Smokowski & Kopasz, 2005; Storch, Nock, Masia-Warner,

& Barlas, 2003). Verbal aggression is also a direct form of bullying, and includes dirty looks, name-calling, intimidating phone calls, and verbal threats of aggression (Nansel et al., 2001; Smokowski & Kopasz, 2005). Relational aggression is an indirect type of bullying, and consists of gossiping, public humiliation, group exclusion, and maliciously spreading rumors (Espelage & Swearer, 2003; Smith et al., 2002; Smokowski & Kopasz, 2005). Intimidation can be both a direct and indirect form of bullying, and involves threatening to reveal personal information, playing a "dirty trick", defacing property or clothing, and taking students' possessions (Smokowski & Kopasz, 2005).

Researchers have found that boys and girls are equally likely to be victimized (Kochenderfer & Ladd, 1996; Paul & Cillessen, 2003; Storch, Brassard, & Maria-Warner, 2003). However, sex differences are often detected in the types of bullying that boys and girls experience. Physical and verbal aggression are common types of bullying among boys (Culletin & Crick, 2005; Nansel et al., 2001; Storch et al., 2003). Conversely, verbal and relational aggression are common types of bullying among girls (Culletin & Crick, 2005; Nansel et al., 2001; Storch et al., 2003).

Prevalence. The majority of bullying incidents occurs in or close to school, and generally in areas where adult supervision is minimal such as school playgrounds and hallways (Smokowski & Kopasz, 2005). Prevalence estimates of bullying often involve school-aged children and adolescents, and few studies provide bullying estimates of younger children (Crick, Casas, & Ku, 1999). The exact prevalence of bullying is difficult to generate as definitions and measures used across studies vary (Espelage & Swearer, 2003). In Canada, reported rates vary from about 15 to 25% of students being bullied (Beran & Tutty, 2002; O'Connell et al., 1997). Researchers in other countries such as the United States, Britain,

Portugal, Greece, and Japan report similar rates of bullying (Espelage & Swearer, 2003;

Kalliotis, 2000; Nansel et al., 2001; Pereira et al., 2004; Rios-Ellis, Bellamy, & Shoji, 2000).

Correlates of bullying. Few studies have investigated the correlation between peer

victimization and specific parenting behaviors. Ladd and Kochenderfer-Ladd (1998) examined

features of parenting behavior and the parent-child relationship as correlates of peer

victimization in young children. The researchers found that parenting styles that involved high

intrusive demands and low responsiveness were related to peer victimization in both boys and

girls. Furthermore, parent-child interactions characterized by intense closeness were associated

with high levels of peer victimization in boys. Thus, children with controlling or overbearing

parents may be at an increased risk of being bullied. Indeed, Finnegan, Hodges and Perry

(1995) found that girls of mothers with high levels of coercive and emotional control

experienced high levels of victimization at school. Similarly, Mohr (2006) found that victims

perceived their mother and father as less affectionate and supportive than non-victims. The

authors argued that parental affection and support enable a child to establish a high degree of

self-esteem and that this reduces the probability of becoming a victim of peers. To further

investigate the link between parental behaviors and peer victimization, the current study

examined the association between parental involvement in education and children's

experiences of bullying.

Many studies have examined the association between peer victimization and children's

mental health. Studies have shown that children who are bullied report many social-emotional

and behaviour problems. For instance, they are likely to feel lonely, embarrassed, hopeless,

helpless, and isolated (Carney, 2000; Juvonen et al., 2000; Kochenderfer-Ladd & Wardrop,

2001; Storch & Masia-Warner, 2004; Storch, Zelman, Sweeney, Danner, & Dove, 2002). Low

self-esteem, anxiety, posttraumatic stress, depression, suicidal ideation, and negative social perceptions have also been reported (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Mynard, Joseph, & Alexander, 2000; Paul & Cillessen, 2003; Skues, Cunningham, & Pokharel, 2005; Storch & Esposito, 2003; Storch, Masia-Warner, Crisp, & Klein, 2005).

Additionally, several studies have found a significant relation between peer victimization and self-concept. Specifically, bullied children often report low levels of self-concept or global self-worth (Callaghan & Joseph, 1995; Graham & Juvonen, 1998; Grills & Ollendick, 2002; Neary & Joseph, 1994). Furthermore, Grills and Ollendick (2002) found that children's global self-worth moderated the association between peer victimization and anxiety. Thus, bullied children who have high levels of self-concept may be at a reduced risk of developing additional social-emotional problems. To further investigate the association between bullying and self-concept, the present study examined the degree to which peer victimization is related to self-concept as well parental involvement in children's education.

In addition to self-concept, several factors have been identified that moderate the link between peer victimization and social-emotional and behavioural problems. Victimized children who report high levels of social support and prosocial behaviours of their peers experience few adjustment problems (Kochenderfer & Skinner, 2002; Rigby, 2000; Storch & Masia-Warner, 2004). As well, the relation between bullying and negative self-views is exacerbated among male and female adolescents who mature early (Nadeem & Graham, 2005). Victimized children who are an ethnic majority in the classroom may feel more loneliness and social anxiety, compared to victims of an ethnic minority (Bellmore, Witkow, Graham, & Juvonen, 2004; Graham & Juvonen, 2002; Verkuyten & Thijs, 2002). Perhaps children of an ethnic majority are likely to blame the bullying on internal factors, because of an expectation

that they should "fit in" (Bellmore et al., 2004). In contrast, children of an ethnic minority may be likely to blame the bullying on external factors (Bellmore et al., 2004). This is supported by Mynard et al.'s (2000) findings that an external locus of control moderates the link between bullying and psychosocial adjustment.

Bulling and achievement. While the bullying of some children may be transient, a substantial number of children continue to be bullied for extended periods of time (Bond et al., 2001; Kochenderfer-Ladd & Wardrop, 2001; Paul & Cillessen, 2003). Perhaps as a result of psychosocial adjustment problems and for fear of repeatedly being targeted, bullied children report that they are afraid of going to school and seek out ways to try to avoid school (Buhs, Ladd, & Herald, 2006; Storch et al., 2003; Storch & Masia-Warner, 2004). Fried and Fried (1996) found that bullied students drop out at a higher rate than students who were not bullied. Furthermore, teachers report that bullied students have difficulty concentrating or paying attention in the classroom (Hanish & Guerra, 2002; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1998). Kochenderfer and Ladd (1996) found that after being victimized, students' positive attitudes at the beginning of the school year became negative due to fear and vulnerability. Moreover, these feelings persisted even after the bullying ended (Kochenderfer & Ladd, 1996). Thus, it seems plausible that bullying interferes with learning as children who are bullied may experience a reduced sense of enjoyment, curiosity and persistence towards learning academic tasks. Previous research has not yet explored this association and the present study investigated the relation between peer victimization and academic motivation, as well as parental involvement and self-concept.

Additionally, it seems likely that involvement in bullying interferes with learning as children who avoid school likely have negative social and academic perceptions, which is

likely related to poor academic achievement. As expected, many researchers have linked peer victimization to low academic achievement (Buhs et al., 2006; Graham et al., 2003; Juvonen et al., 2000; Lopez & DuBois, 2005; Nishina et al., 2005; Paul & Cillessen, 2003; Schwartz et al., 2001; Schwartz et al., 2005). However, a notable exception is a longitudinal study conducted by Hanish and Guerra (2002) who found no direct relation between peer victimization and academic adjustment or withdrawal in elementary students. Rather, bullied children who reported high levels of social-emotional and behavioral problems (i.e., aggression, attention problems, delinquency, anxiety, depression, and withdrawal) obtained low academic achievement. Thus, the findings of Hanish and Guerra (2002) suggest that bullied children may experience low achievement when they perceive low social support and are struggling with additional adjustment problems. Similarly, Beran and Lupart (2005) examined the relationship between achievement and peer harassment using individual and peer characteristics as mediating factors. Using students drawn from the Canadian National Longitudinal Survey of Children and Youth (NLSCY), the authors found that adolescents who are harassed by their peers are at risk of experiencing poor achievement if they exhibit disruptive behavior problems and poor peer interactions. Indeed, other researchers have found that the association between bullying and academic achievement may be moderated by students' social-emotional and behavioral problems (Juvonen et al., 2000; Ladd, Kochenderfer, & Coleman, 1997; Nishina et al., 2005; Schwartz et al., 2005). Conversely, Woods and Wolke (2004) offered an alternative explanation of similar achievement levels between victims and non-victims. The authors proposed that victims actually increase their academic abilities by focusing more on schoolwork as a method of "escaping" victimization.

In summary, the nature of the relation between academic achievement and peer victimization is complex. Many researchers have found a link between peer victimization and achievement, but this finding is not always supported. One likely explanation is that bullied children experience minimal academic success, particularly when they have low self-worth, low pro-social skills, have few or no friends, and exhibit significant social-emotional and behavioral problems. Thus, it is possible that victimized children who perceive high social support and are well adjusted do not experience academic problems. The current study investigated the degree to which peer victimization was directly or indirectly related to academic achievement while simultaneously examining academic motivation, self-concept and parental involvement.

<div align="center">Structural Equation Modeling</div>

To examine these multiple relationships, structural equation modeling (SEM) was used. It is recognized as a powerful statistical tool that is commonly used in educational psychology research (Kline, 1998; Reynolds & Gutkin, 1998). According to Reynolds and Gutkin (1998), "Latent variable SEM, by estimating and dealing with errors of measurement...provides more stable, more accurate measures of the effects of one variable on another. This ability to remove the effects of error in the estimation of the model is an advantage over other methods of analysis of both non-experimental and experimental research" (p. 102-103). Indeed, SEM has the ability to model shared relations and measure both direct and indirect effects of variables, making it both a powerful and flexible method of analysis. Thus, SEM was utilized in the present study.

Research Objectives

The primary objective of this study was to determine critical individual, family, and social factors that are directly and indirectly related to the academic achievement of Canadian students. There are two anticipated outcomes for the present investigation:

1. To determine how academic motivation, self-concept, parental involvement, and peer victimization are related to children's academic achievement.

2. To evaluate the usefulness of Eccles' theories of achievement to examine factors that influence learning outcomes for children.

CHAPTER THREE

METHOD

Participants

Participants in the present study were recruited from 26 randomly selected elementary schools in Calgary, Alberta. Schools from both the Calgary Board of Education and Calgary Catholic School Division were contacted by telephone. School principals were informed of the study and the grades five and six teachers and students were invited to participate. All interested principals were offered a package containing further information about the study (parent cover letter, student and teacher consent forms, and student and teacher questionnaires). These packages were sent to school principals in person or via email, and a future date was arranged to contact the schools again.

Three schools from the Calgary Board of Education and one school from the Calgary Catholic School Division agreed to participate, including one school in the northwest quadrant of Calgary, one school in the southeast, and two schools in the southwest (one from the public and one from the separate school division). Further details of the study were presented to the grades five and six teachers and students, and a cover letter and consent form were sent home with all students. Of the 582 grades five and six students invited to participate, 26% were retained in the study ($n = 154$). Students retained in the study where those who provided informed assent and whose parents provided informed consent. In addition, their teachers ($n = 21$) provided informed consent and were included in the study.

Measures

Academic Achievement

Achievement was measured by children's most recent school grades and teachers' perceptions of children's overall achievement.

Teacher reports of school grades. Academic achievement was assessed using children's school grades from the most recent grading period. A mean grade score was calculated from grades reported in mathematics, science, social studies, and language arts using a 5-point scale (e.g., 5 = 90% and above, 4 = 80–89%, 3 = 60–79%, 2 = 50–59%, 1 = 49% and below). Teachers reported students' grades utilizing the 5-point system in three of the participating schools. The fourth school reported percentages, which were then converted to the 5-point scale.

Teacher reports of overall achievement. Elementary homeroom teachers were asked to rate children's overall academic progress compared with other students in the same grade. Academic achievement levels were determined from the teachers' responses to the following statements: 1) "Knows as much as the other children in his/her class"; 2) "Doesn't do well in school, even when he/she tries"; and 3) "The teacher thinks he/she is smart." Responses were based on a 5-point scale: 1) always true; 2) mostly true; 3) partly true and partly false; 4) mostly false; 5) always false. Coding was reversed so that high scores indicated a high level of achievement, and the Chronbach's alpha coefficient for this scale was .92.

Academic Motivation

Academic motivation was measured by students' and teachers' responses to 18-items from the Children's Academic Intrinsic Motivation Inventory (CAIMI) (Gottfried, 1986). The CAIMI is a semi-structured interview scale found to be a valid and reliable measure of

academic motivation (Gottfried, 1986). Specifically, Gottfried (1986) demonstrated good internal consistency and test-retest reliability, as well as adequate criterion-related validity. For instance, internal consistency reliability coefficients reported for several studies were between .80 and .83 (Gottfried, 1986). The scale measures children's general enjoyment of learning, as well as their curiosity and persistence towards challenging and novel tasks. Responses were based on a 5-point scale: 1) strongly agree, 2) agree, 3) don't know, 4) disagree, and 5) strongly disagree. Coding was reversed so that high scores indicated a high level of curiosity, persistence and enjoyment of learning. See Appendix A for items on the CAIMI.

Student reports. Students were asked to rate their motivation towards learning by responding to statements such as "I like to learn." The Chronbach's alpha coefficient for all scale items was. 76.

Teacher reports. Homeroom teachers also rated students' academic motivation by responding to the aforementioned items, which were modified to be applicable for teachers. For example, "[student name] likes to learn." The Chronbach's alpha coefficient for all scale items was .88.

Self-Concept

Level of self-concept was measured with the Tennessee Self-Concept Scale – Second Edition (TSCS:2) (Fitts & Warren, 1996). The TSCS:2 provides information on students' perceived competence within academic, personal, physical, social, moral, and family domains. Responses of the 20-item structured interview scale are considered reliable and valid (Fitts & Warren, 1996). In particular, the authors reported the TSCS:2 to have high internal consistency, and adequate test-retest reliability, content validity, and criterion-related validity. For example, Fitts and Warren (1996) reported an internal consistency estimate of .91 from the

standardization sample. Responses are based on five categories: 1) always true; 2) mostly true; 3) partly true and partly false; 4) mostly false; and 5) always false. Students' and teachers' responses were included, and coding was reversed so that high scores indicated high levels of student self-concept. See Appendix B for items on the TSCS:2.

Student reports. Students were asked to rate their level of self-concept by responding to 20 statements (e.g., "I'm happy with who I am"). The Chronbach's alpha coefficient for the present sample was .86.

Teacher reports. Teachers also rated their perceived level of student self-concept by responding to the above-mentioned items, which were modified to be appropriate for teachers. For instance, "Is happy with who he/she is." The Chronbach's alpha coefficient for the 17 items was .92. A subscale of the TSCS:2 consisted of an additional three items that were utilized to measure *teacher reports of overall achievement.*

Parental Involvement

Perceived level of parental involvement in children's education was assessed with the Parental Involvement Scale (Paulson, 1994). The 16-item structured interview scale provides information on parental values towards achievement, interest in schoolwork, and involvement in school activities. Paulson (1994) reported that the scale items demonstrate good internal reliability and criterion-oriented validity. For instance, highly significant correlations were found between the parenting scale and similar scales from the Children's Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965) and the Family Environment Scales (FES; Moos & Moos, 1981). Responses to the Parental Involvement Scale and are rated on a 5-point scale: 1) strongly agree; 2) agree; 3) don't know; 4) disagree; and 5) strongly disagree. Students' and teachers' responses were utilized, and coding was reversed so that high scores indicated high

parental involvement in children's education. See Appendix C for items on the Parental Involvement Scale.

Student reports. Students were asked to rate the perceived level of parental involvement in their education by responding to statements such as "My parents take an interest in my activities." The Chronbach's alpha coefficient of the present sample was .75.

Teacher reports. Homeroom teachers also rated the perceived level of parental involvement in students' education by responding to the above-mentioned items, which were modified to be appropriate for teachers (e.g., "Parents take an interest in his/her activities"). The Chronbach's alpha coefficient of all scale items was .92.

Peer Victimization

The objective of this factor is to assess the frequency of school bullying that children experience. Ten items from the Bully/Victim Questionnaire (Olweus, 1989) provided information on children's exposure to various forms of bullying. Responses were based on five categories; 1) I haven't been bullied at school in the past couple of months; 2) it has only happened once or twice; 3) 2 or 3 times a month; 4) about once a week; and 5) several times a week. The Bully/Victim Questionnaire was developed by Olweus (1989) and modified by Garrity et al. (1997). Solberg and Olweus (2003) reported that responses to the questionnaire demonstrated high internal consistency and high criterion-oriented validity. For example, the Bully/Victim Questionnaire did not correlate with the Bergen Questionnaire on Anti-Social Behavior (Bendixen & Olweus, 1999) and indicated high discriminant validity. Coding was reversed so that high scores indicated a high level of peer victimization. See Appendix D for items on the Bully/Victim Questionnaire.

Student reports. Students were asked to rate the frequency of bulling that they experience by responding to questions such as "How often have you been bullied at school in the past couple of months?" The Chronbach's alpha coefficient of the present sample was .81.

Teacher reports. Homeroom teachers also rated the frequency of student victimization by responding to the aforementioned items, which were modified to be appropriate for teachers (e.g., "How often has he/she been bullied at school in the past couple of months?"). The Chronbach's alpha coefficient for all scale items was .88.

<div align="center">Procedure</div>

Data Collection

Student participants individually completed the questionnaires in their classrooms during regular school hours, but when a small number of children in a classroom participated they went to the library. The four questionnaires were administered in a counterbalanced order. Student participants were asked to report their age, gender and ethnicity, and it took participants 15-30 minutes to complete the questionnaires.

Each student was given a questionnaire booklet with an identification (ID) number on the front page. The students were asked to print their name and homeroom beside the matching ID number on a list provided by the researcher. The researcher utilized this list to randomly select ten participating students from each classroom. Next, teachers were asked to complete ten questionnaire booklets for the ten selected students. The list remained with the teachers, and they were asked to print each student's ID number on the front page of the corresponding booklet. ID numbers were used to cross-reference the student and teacher data, and only ID numbers were used in the data file. Teachers were also asked to report students' most recent school grades, and the teacher questionnaires were collected from each school two weeks later.

Data Preparation

Of the 154 participants, responses from six students and their teachers were not included in the analyses due to a large proportion of missing cases. Thus, 148 students and corresponding teacher responses were included in the analyses. Descriptive analyses, frequency counts, means, standard deviations, skewness, kurtosis, range, and minimum and maximum values for each of the variables were calculated. Next, analyses of variance (ANOVAs) were conducted to evaluate mean differences between variables based on gender, age, and ethnicity. The analyses yielded significant results for several variables, and effect sizes were used to determine if meaningful differences exist.

Model Testing

Once the items within the variables were determined, a latent variable path model was developed and tested using EQS: A Structural Equation Program software package (Version 6.1; Bentler, 2004). Structural equation modeling (SEM) was used to determine the degree of association among academic achievement, parental involvement, student self-concept, and peer victimization. Thus, the degree to which each variable is directly or indirectly related to achievement as well as every other variable in the model can be determined from mathematical calculations. The main advantage of model development is to provide an explanation, rather than merely a description, of achievement differences across students.

First, standard deviations were examined to determine the variance in the data. Second, the proposed model was derived from a correlation matrix of all variables. The correlation matrix is a numeric measure of the strengths of linear relationships between two variables. The purpose of the correlation matrix in the proposed model was to verify the anticipated relation between two variables, as well as to search for unexpected links between variables. SEM uses

observed or measured variables as indicator variables (e.g., student report of parental involvement and teacher report of parental involvement) and from them derives latent variables (e.g., parental involvement) also known as factors or constructs. Based on the correlation matrix results and consistent with theory, five latent factors were formed from the indicator variables. These include: 1) academic achievement; 2) academic motivation; 3) parental involvement; 4) student self-concept; and 5) peer victimization. The ten indicator variables from the correlation matrix were initially included in the model, and the pattern of correlations guided the development of the model.

The model was fit to the covariance matrix using Maximum Likelihood (ML) estimation. The Maximum Likelihood (ML) estimator is considered to be the dominant estimator for structural equation models. The ML method simultaneously estimates all parameters, while using information from the whole system of equations. ML is also known to be an efficient estimator in large samples and robust to violations of normal distributions (Kelloway, 1998).

For the present study, SEM was used to explore the relationships among numerous variables simultaneously. Through the use of EQS, the inter-correlation matrix was converted to a variance-covariance matrix used to fit the model. The goal was to create the most parsimonious model, and since the relationships among these variables has not been simultaneously investigated in previous research, the model was re-specified to develop the best fitting model. To achieve model parsimony, connections between variables were adjusted accordingly and some variables were removed from the model based on statistical results.

Model results are described in terms of the three indices of explained variance: Pearson chi-square, the Comparative Fit Index (CFI) and the Standardized Root Mean Residuals (SRMR). The Chi-square (χ_2) statistic, its degrees of freedom, and its significance level are

reported. If the model is able to reproduce the covariance matrix, a non-significant value will be indicated. However, for larger sample sizes, the chi-square is almost always significant since the magnitude is affected by the sample size. Chi-square is also affected by correlations in the model: the smaller the correlations, the poorer the fit. A fit index called the CFI was used as it is minimally affected by sample size and provides an indication of the overall fit of the model. Values range from 0 to 1, and values between .90 and .95 are acceptable. The Standardized Root Mean Residuals (SRMR) is the standardized difference between the observed covariance and predicted covariance, and averages the size of the residuals. A smaller SRMR indicates less error, and values of .05 or less are considered acceptable (Kelloway, 1998). Results of the model are presented in the following section.

CHAPTER FOUR

RESULTS

The results of the present investigation are organized in two sections. Section one contains demographic information on the characteristics of the sample used in the present study, as well as the descriptive statistics of each variable. Section two contains a description of the measured variables, the procedure for model development, as well as the model of factors related to achievement.

Descriptive Statistics

Demographic Description of the Sample

Demographic characteristics of the grades five and six students are summarized in Table 1, namely the gender, age and ethnicity of children.

Table 1

Demographic Characteristics of the Students (N = 148)

Variable	Total	Percentage
Gender of child		
Male	74	50.0
Female	74	50.0
Age of child		
9	1	0.7
10	65	43.9
11	67	45.3
12	14	9.5
13	1	0.7
Ethnicity of child		
Caucasian	114	77.0
Chinese	9	6.1
East Indian	5	3.4
Korean	4	2.7
Filipino	4	2.7
Vietnamese	3	2.0
Israeli	2	1.4
Aboriginal	2	1.4
Pakistani	1	0.7
Nigerian	1	0.7
El Salvadoran	1	0.7
African-Canadian	1	0.7
Mexican-Canadian	1	0.7

The sample consists of 74 male and 74 female students in grades five and six. The majority of children were Caucasian and between 10- and 11- years old.

Description of Variables

The mean, standard deviation, skewness, kurtosis, range, and minimum and maximum values for each variable are presented in Table 2. Students reported information on gender, age and ethnicity, as well as their academic motivation, parental involvement in education, self-concept, and frequency of peer victimization. Variables reported by the homeroom teachers include students' overall achievement and recent school grades, academic motivation, parental involvement, self-concept, and frequency of bullying experiences.

Table 2

Descriptive Statistics of the Variables (N = 148)

Variable	M	SD	Skewness	Kurtosis	Range	Min.	Max
Teacher report of achievement	11.82	2.66	-.86	.37	11	4	15
Teacher report of school grades	3.37	.72	.18	-.14	3	2	5
Student report of academic motivation	54.01	6.67	-.60	.52	37	30	67
Teacher report of academic motivation	58.47	9.46	-.57	.59	47	29	76
Student report of parental involvement	45.00	5.14	-.24	-.44	23	32	55
Teacher report of parental involvement	57.11	8.78	-.10	-.38	42	33	75
Student report of self-concept	74.00	8.53	-.44	-.03	40	50	90
Teacher report of self-concept	67.64	8.10	-.07	-.00	38	47	87
Student report of peer victimization	13.72	5.11	1.40	1.55	23	10	33
Teacher report of peer victimization	12.08	3.64	3.16	12.30	22	10	32

Skewness and kurtosis are descriptive statistics that describe the distribution of the data. Skewness is a measure of lack of symmetry in the data. A distribution is symmetric if the data fall equally to the left and right of the centre point, and data with a skewness of 3.0 or greater are considered to be extremely skewed (Lohman, 2003). Kurtosis is a measure of whether the

data are peaked or flat relative to a normal distribution. Data sets with kurtosis values greater than 10.0 suggest caution when interpreting the results, whereas values greater than 20.0 indicate a serious problem (Lohman, 2003). In the present data, the *teacher report of peer victimization* variable shows a high positive skew and high kurtosis. This indicates an abnormal distribution of data, with scores being extremely peaked and with the majority of scores falling below the mean. Thus, with the exception of teachers' reports of peer victimization, all the data are normally distributed.

Analyses of Variance

ANOVAs were conducted to investigate gender, age, and ethnic differences for students' and teachers' reports of academic achievement, academic motivation, parental involvement, self-concept, and peer victimization. Age was analyzed by comparing grades five and six students, and ethnicity was analyzed by comparing Caucasian and Non-Caucasian students. The results are presented in Table 3.

Table 3

Between Subjects Analyses of Variance

Source	df	F	n	p	Eta
Student report of academic motivation					
Gender	1	.33	148	.56	.00
Age	1	.00	148	.97	.01
Ethnicity	1	3.44	148	.07	.00
Teacher report of academic motivation					
Gender	1	9.97	148	.00	.06
Age	1	.29	148	.59	.02
Ethnicity	1	3.6	148	.06	.00
Student report of parental involvement					
Gender	1	1.20	148	.16	.01
Age	1	.17	148	.68	.02
Ethnicity	1	.52	148	.47	.01
Teacher report of parental involvement					
Gender	1	.03	148	.87	.00
Age	1	.09	148	.76	.00
Ethnicity	1	.14	148	.71	.00
Student report of self-concept					
Gender	1	.21	148	.64	.00
Age	1	.00	148	.97	.02
Ethnicity	1	.08	148	.78	.01
Teacher report of self-concept					
Gender	1	3.5	148	.06	.02
Age	1	1.98	148	.16	.00
Ethnicity	1	.19	148	.66	.04
Student report of peer victimization					
Gender	1	4.06	148	.05	.03
Age	1	2.69	148	.10	.02
Ethnicity	1	1.73	148	.19	.00
Teacher report of peer victimization					
Gender	1	.81	148	.37	.01
Age	1	.99	148	.32	.00
Ethnicity	1	1.92	148	.17	.00
Teacher report of school grades					
Gender	1	2.21	148	.14	.02
Age	1	3.49	148	.06	.04
Ethnicity	1	6.68	148	.01	.04
Teacher report of overall achievement					
Gender	1	3.37	148	.07	.02
Age	1	.52	148	.47	.00
Ethnicity	1	1.42	148	.24	.00

As shown in the tables several significant values were found, but all the effect sizes were small. Thus, there are no meaningful differences in achievement or achievement-related variables across gender, age and ethnicity of elementary students.

<div align="center">Procedures for Model Development</div>

A latent variable path model (LVPM) was developed for the sample and tested using EQS. SEM was used to evaluate the general hypotheses of the relationships among academic achievement and parental involvement, academic motivation, self-concept and peer victimization. Correlations among the variables are presented below.

Correlations

Table 4 shows correlations between the variables initially utilized in the model. The correlation matrix suggests that some variables are highly correlated and some show non-significant correlations. The value of each variable in the correlation matrix was obtained by taking the sum of all items in each scale.

Table 4

Pearson Product Correlations for Achievement and Achievement-Related Variables (N = 148)

Variable	1	2	3	4	5	6	7	8	9	10
Student report of academic motivation	-	.22**	.41**	.06	.14	.13	.43**	.18*	-.14	-.14
Teacher report of academic motivation		-	.18*	.55**	.58**	.74**	.02	.61**	-.04	-.30**
Student report of parental involvement			-	.16	.16	.17*	.17*	.37**	-.20*	-.12
Teacher report of parental involvement				-	.46**	.57**	.01	.47**	-.10	-.04
Average grade					-	.75**	.08	.22**	-.07	-.11
Teacher report of overall achievement						-	.03	.42**	-.10	-.18*
Student report of self-concept							-	.20*	-.35**	-.11
Teacher report of self-concept								-	-.24**	-.43**
Student report of peer victimization									-	.15
Teacher report of peer victimization										-

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

The correlation matrix presents a range of low to high correlations, with the highest correlation between teachers' reports of school grades and overall academic achievement (*r* = .75**), and the lowest (non-significant) correlation between teachers' reports of parental involvement and students' reports of self-concept (*r* = .01). Overall, academic achievement (as measured by teachers' reports of school grades and overall achievement) is most highly correlated to teachers' reports of academic motivation, self-concept and parental involvement in education. Academic achievement does not appear to be correlated with students' reports of
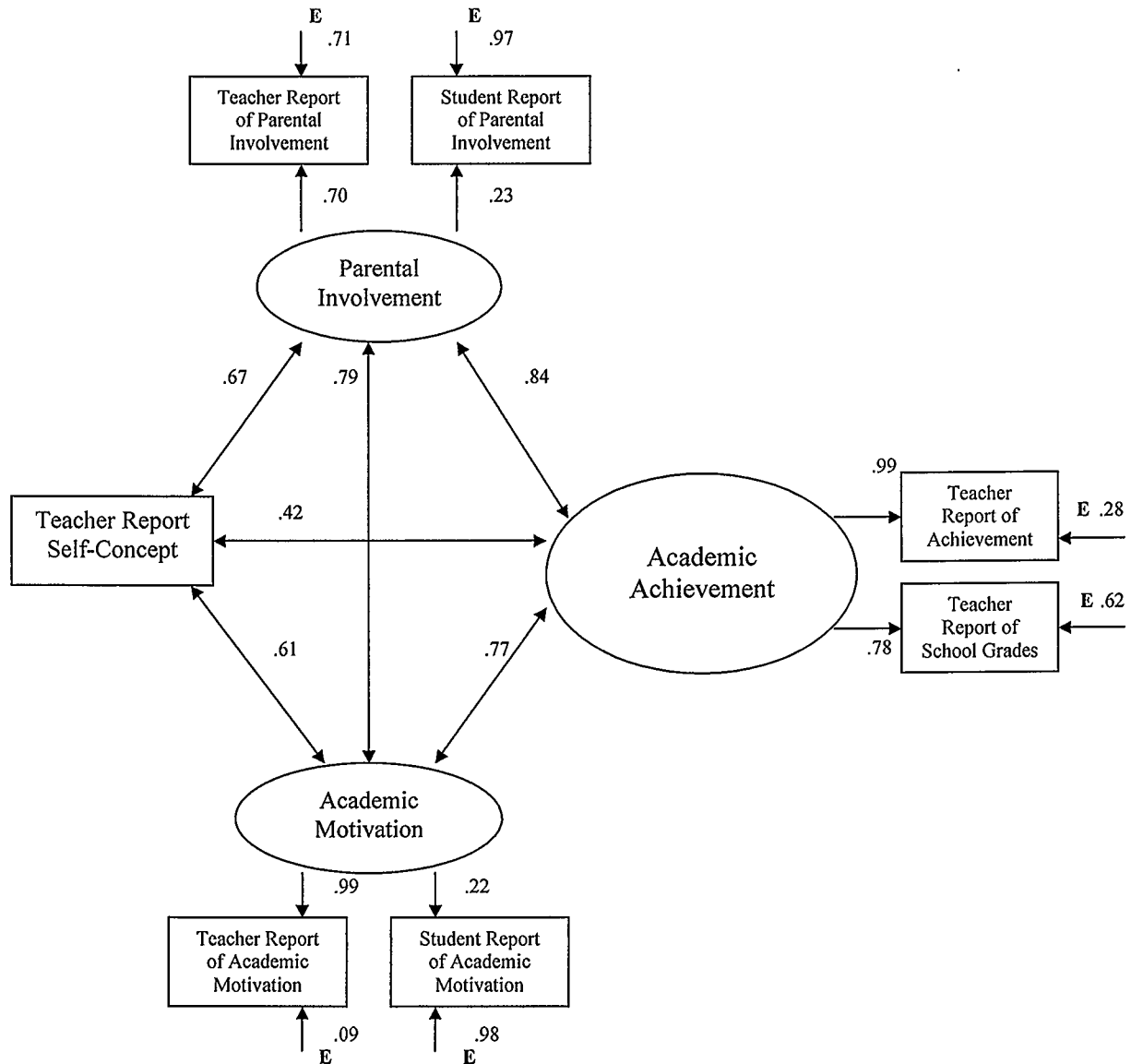
academic motivation, self-concept and parental involvement. These results suggest a

discrepancy between two report sources of information. Lastly, the correlation matrix indicates

that achievement is not related to students' or teachers' reports of peer victimization.

Latent Variable Path Model

To develop the model, correlation coefficients from Table 4 and standard deviations from

Table 2 were entered into EQS. The resulting model is recursive, meaning that the causal flow

in the model is bi-directional, and all path arrows flow two ways. In EQS, paths between

highly correlated variables were specified for both latent and indicator variables. The latent

variable path model of achievement for elementary students is shown in Figure 1.

Figure 1. Latent variable path model of academic achievement employing Maximum Likelihood estimation (N = 148).

The model converged in 10 iterations providing a good fit for the data, χ_2 (9) = 34.37, p < .000; SRMR = .02; CFI = .94. The variables in the model collectively explain 94% of the variance in the data. Other goodness of fit indices are reported and show comparable results:

Bentler-Bonett Normed Fit Index (NFI) = .92; and Bentler-Bonett Non-Normed Fit Index (NNFI) = .86. The NFI compares the model in question to a null model that specifies no relationships between variables in the model (all of the correlations or covariances are set to zero). According to the NFI, the model is 92% better than the null model whereby a value between .90 and .95 is acceptable. The NNFI compares the lack of fit of the null model to the lack of fit of the target model but corrects for complexity of the model. Therefore, the value of the NNFI decreases as the number of parameters is added. Thus, the NNFI is lower than the NFI.

The present study investigated whether academic motivation, parental involvement, self-concept and peer victimization are related to the academic achievement of elementary students. Figure 1 illustrates the multidirectional relationship among these factors. The latent variable academic achievement, on the far right of the model, is measured by teachers' reports of children's most recent school grades and overall academic achievement. Variables related to achievement include student characteristics such as academic motivation and self-concept. Achievement is positively correlated with academic motivation (as measured by students' and teachers' reports of academic motivation; $r = .77$). Thus, students who generally enjoy learning, and are curious and persistent towards novel and challenging tasks are likely to have high levels of achievement. Achievement is also positively correlated with the indicator variable self-concept (as measured by teachers' reports of student self-concept; $r = .42$). Hence, students who generally perceive themselves as competent individuals are likely to have high levels of academic achievement. Lastly, achievement is positively related to parental involvement (as measured by students' and teachers' reports of parental involvement; $r = .84$). Thus, children who perceive that their parents have positive values of education and take an

interest in their school are likely to have high levels of achievement. In the model, peer victimization was not significantly related to academic achievement.

Additionally, the proposed model demonstrates several significant inter-correlations between the achievement-related factors. For instance, academic motivation and parental involvement are positively correlated ($r = .79$). Therefore, students who are curious, persistent and generally enjoy learning often perceive their parents to value and be involved in their education. Parental involvement and self-concept are also positively correlated ($r = .67$). Thus, children who perceive high parental interest and involvement in their schoolwork feel generally competent as individuals. Finally, academic motivation and self-concept are positively related ($r = .61$). This indicates that students who are motivated and enjoy learning also perceive themselves to be competent.

Summary of Model Results

According to the SEM model, several individual and family characteristics were significantly related to the academic achievement of elementary students. That is, individual characteristics such as academic motivation and self-concept, and family characteristics such as parental involvement in education are related to achievement. Overall, the model indicates that the children most at-risk for poor academic achievement will likely experience a combination of negative factors, such as low motivation towards learning, low self-concept, and low parental involvement in their education.

CHAPTER FIVE

DISCUSSION

The present study had two objectives: 1) to develop a model that examines the interrelationships among elementary students' academic achievement and individual, family and social factors; and 2) to evaluate the usefulness of Eccles' Expectancy-Value Theory (Eccles et al., 1983) and Model of Achievement-Related Choices (Eccles, 1994). For the first objective, results from the latent variable path analysis (LVPA) indicate that parental involvement in children's education, as well students' academic motivation and self-concept are predictors of achievement. Furthermore, high parental involvement in students' education is related to high levels of self-concept and motivation towards learning. In terms of the second objective, Eccles' theories of achievement were useful in explaining the interrelationships among students' academic achievement and individual and family characteristics. Specifically, Eccles' model claims that children value and invest in activities in which they are competent to perform successfully. Children's perceived competence is influenced by their past experience, level of skill and ability, social norms, as well as parental values and attitudes. Thus, children with high parental involvement in their education are likely to feel competent and motivated to complete challenging academic tasks and are likely to achieve academic success.

This chapter is organized in four sections. First, the results will be discussed and compared with previous research findings. Next, the strengths and limitations of the present study will be presented, followed by suggestions for future research, interventions and policy. Finally, this chapter will conclude with a brief summary of the main findings of the present study.

Analysis of Research Findings

The current study extends our understanding of academic achievement by simultaneously examining individual, family and social factors, and the collective relationship they have with students' academic achievement. Results from the model indicate several significant interrelationships among academic motivation, self-concept, parental involvement, and academic achievement. Also, no significant relationships were found among peer victimization, academic achievement and the achievement-related factors.

Additionally, Eccles' theories of achievement emphasize the importance of the interrelationship among social and psychological contexts on students' development and achievement. The results of the present study concur with Eccles' theories and demonstrate that combinations of several factors in children's lives interconnect and are related to academic performance. The following section utilizes Eccles' theories of achievement to describe the interrelationships among these factors and provide a comprehensive illustration of academic achievement in elementary students.

Factors Related to Achievement

Academic Motivation

The findings from the present study indicate that students' motivation towards learning is predictive of academic achievement. More specifically, students who generally do not enjoy learning and display low motivation to complete novel and challenging tasks may obtain low levels of achievement.

Academic motivation and achievement. Past research has indicated that elementary students' academic motivation and achievement are related (Boggiano et al., 1992; Broussard & Garrison, 2004; Goldberg & Cornell, 1998; Gonzalez-Pienda et al., 2002; Gottfried, 1985,

1990, 2001; Weiner, 1985). The results of the current study confirm that children perform well in school when they are motivated to learn academic tasks. However, these results are inconsistent with Stipek and Ryan (1997) who found no relationship between classroom motivation and achievement in young children. The differences in research findings may be due, in part, to inconsistent methods of measuring academic achievement. Moreover, Stipek and Ryan (1997) examined the association between academic motivation and achievement among young children in kindergarten, and the results may not be generalizable to the older elementary students assessed in the present study. Indeed, Gottfried et al. (2001) found that students' academic motivation becomes more stable in adolescence in relation to the early elementary years. In terms of Eccles' theories of achievement, students who value academic achievement are more likely to invest in achievement-related activities. Thus, children who value education and perform well in school are likely to be curious, persistent and generally enjoy learning challenging academic tasks.

Self-Concept

In addition to academic motivation, the results of the proposed model indicate that students' self-concept is predictive of academic achievement. In particular, children with high personal beliefs are more likely to obtain high levels of achievement, compared to children with a low sense of competence. Also, the model suggests that students' self-concept is related to academic motivation. Thus, children with positive beliefs about themselves are likely to enjoy learning challenging academic tasks and demonstrate curiosity and persistence in the classroom.

Self-concept and achievement. The relationship between students' general self-concept and academic achievement was also examined. Past research suggests a positive relation between

self-concept and academic achievement in elementary students (Anderman et al., 1999; Chemers et al., 2000; DuBois et al., 1999; Goldberg & Cornell, 1998; Guay et al., 1999; Guay et al., 2003; Gonzalez-Pienda et al., 2002; Marsh et al., 2000; Skaalvik & Valas, 1999; Yeung & Lee, 1999). However, the present study utilized students' and teachers' ratings of self-concept and found conflicting results. Teachers' ratings of students' self-concept was moderately related to academic achievement, but no significant relation was found between students' reports of personal competence and achievement. The latter finding illustrates a discrepancy between students' and teachers' perceptions of students' general competence and self-worth. Students may report a more optimistic and positive level of personal competence, compared to a more realistic level of student self-concept reported by teachers. Indeed, past research indicates that reports of self-concept tend to become more realistic and more correlated with teachers ratings as children grow older (Fredricks & Eccles, 2002; Freedman et al., 2000; Jacobs et al., 2002; Marsh et al., 1998; Wigfield & Eccles, 1992). Previous research has frequently collected only one source of information to assess children's self-concept, and the present study highlights the value of obtaining multiple sources of information to gain a broad understanding of children's development.

In addition to discrepant viewpoints between students and teachers, the results of the current investigation may be due to the method of measuring achievement and self-concept. Specifically, achievement was measured using teachers' reports of school grades and their overall perception of children's achievement. Given that teachers' perceptions of children's sense of competence is likely influenced by children's performance in school, it stands to reason that teachers reported high levels of self-concept for those students who obtained high

levels of achievement. Thus, it is not surprising that teacher ratings of academic achievement are related to teacher ratings of students' self-concept.

Self-concept and academic motivation. Past research has shown that a general decline in self-concept over the first school years is paralleled by a decline in motivation towards learning (Deci & Ryan, 1985; Harter, 1981; Obach, 2003; Skaalvick & Valas, 1999; Spinath & Spinath, 2005; Wigfield et al., 1997). Moreover, previous research has demonstrated a strong link between elementary students' academic motivation and self-concept (e.g., Obach, 2003; Spinath and Spinath, 2005). The relation between self-concept and motivation was examined in the present study and the results indicate a moderate relationship between the two variables. Thus, children value and are motivated to learn and engage in challenging tasks in which they believe themselves to be competent (Eccles et al., 1983; Eccles, 1994).

Parental Involvement

Along with academic motivation and self-concept, parental involvement in children's education was found to be predictive of academic achievement. Hence, children with parents who value learning and education and participate in school-related activities are likely to perform well in school. Additionally, results from the proposed model indicate that parental involvement in education is related to students' academic motivation and self-concept. Therefore, children with parents who actively discuss school assignments, assist with homework, attend school functions, communicate with teachers, and encourage hard work and good grades may be more likely to feel competent and put forth a good effort than if they were not supported. School assignments completed with a high level of effort may result in increased grades and achievement levels.

Parental involvement and achievement. Previous research has demonstrated a link between parental involvement and children's academic success (Bean et al., 2003; Englund et al., 2004; Fantuzzo et al., 1995; Keith et al., 1998; Marchant et al., 2001; Marcon, 1999; McWayne et al., 2004; Miedel & Reynolds, 1999; Miliotis et al., 1999). The results of the present study confirm previous findings and indicate a strong relationship between parental involvement and academic achievement of elementary students. Hence, the extent to which parents actively promote learning in the home, and have direct and regular contact with school has a positive impact on students' academic achievement. For instance, children with parents who actively discuss school (e.g., discuss homework, teachers, friends, future goals, and so on), participate in school-related activities (e.g., attend parent-teacher conferences, concerts and sporting events), and generally promote hard work and good grades are likely to perform well in school.

Although many researchers have found a positive relationship between parental involvement and academic achievement, the direction of this relation is not clear. When examining longitudinal data, some researchers have found that previous achievement contributes to parental attitudes and involvement with children's school (e.g., Shumow & Miller, 2001). Other researchers have found no evidence of a direct impact of parental involvement on children's academic achievement, perhaps because parents are involved indirectly in their child's learning and the students themselves have a more direct and influential impact on achievement (e.g., Bobbett et al., 1995; Fan, 2001; Okpala et al., 2001). Indeed, the direction of the relationship is unclear from previous research and the present model suggests a bi-directional association between parental involvement and achievement. Thus, children with parents who do not participate in their academic development by assisting with homework, attending parent-teacher conferences and emphasizing hard work, good

grades, and future academic goals are likely to perceive that minimal academic performance is acceptable. Conversely, children's poor school performance may cause strain and stress on parents, which may result in parents feeling less willing to assist their child and discuss homework, work habits, school events, and future academic endeavors.

Given the design of the present study, it is difficult to conclude whether the bi-directional relation between parental involvement and achievement is stable over time. For instance, it is possible that parents may be highly involved and provide great assistance when children initially display poor academic success. However, over time parents may feel tired, discouraged and stressed, and possibly reduce personal efforts to help improve their child's academic experience. Longitudinal research is needed to investigate the relationship between parental involvement in children's education and academic achievement over time.

Parental involvement and achievement-related factors. The link between parental involvement in education and children's academic motivation and self-concept has elicited few studies. For instance, Marchant et al. (2001) found a strong positive relation between elementary students' perceptions of parental values about achievement and their own academic motivation and competence. Fantuzzo et al. (1995) found that children of parents who were encouraged to have positive expectations about their child's academic success exhibited high self-concept and academic motivation. The results of the current investigation confirm that parental involvement is moderately associated with students' self-concept and motivation towards learning. Hence, students who perceive their parents to be involved in their education are likely to enjoy learning and feel competent in the pursuit of academic challenging tasks. Actively participating in the learning process may provide children with the encouragement and support necessary for them to feel competent in their ability to try new and challenging

tasks. Additionally, parental involvement in education may encourage children to intrinsically enjoy and value learning, and possibly increase their motivation towards schoolwork by rewarding good effort and school performance.

The interrelationships among parental involvement, self-concept, academic motivation, and achievement can be understood in terms of Eccles' theories of achievement. Eccles and her colleagues claim that the extent to which children value an activity guides their choices and performances on tasks. That is, children's perception of how important the task is, how much they enjoy doing the task, the physical and emotional costs of the task, and how a task fits into future plans influence whether a child values a particular task and is motivated to succeed. For instance, parents involved in their child's education actively promote the importance of doing well in school and discuss future academic goals (i.e., graduating from high school, attending university, and so on). Furthermore, highly involved parents encourage children to view school as a priority and to limit their access to other activities (i.e., part-time job, friends, sports, shopping, and so on) in order to perform well in school. As a result, children may genuinely enjoy learning in school and view education as an important aspect of their life. In turn, children with high parental involvement in their education are likely to value academic success and be motivated to succeed in school.

In addition to the value placed on academic success, Eccles theories of achievement claim that children's achievement-related choices are influenced by their expectations for success and their perceptions of the various options available. These beliefs are shaped by children's personal competence, parental attitudes and values, level of skill and ability, past experiences, and cultural norms. Hence, children's expectation of whether they will perform well in school is influenced, in part, by parental values, attitudes, and participation in their education.

Furthermore, low parental participation may erode a child's sense of competence and reduce their motivation to learn and succeed in school. According to Eccles' theories, children's perceptions of the various options available (i.e., academic options that are appropriate for their gender, age, skill level, and so on) are based, in part, on parental involvement and personal competence. For instance, parental values and attitudes that encourage children to pursue a variety of academic courses may enhance children's view of the number of options available and improve their confidence to invest in many different subject areas. In turn, children will value various academic options and generally be motivated to learn and succeed in school. Thus, in accordance with Eccles' theories of achievement, children's academic performance is influenced by parental involvement in education, self-concept and motivation towards learning.

Peer Victimization

Many researchers have linked peer victimization to low academic achievement (Beran et al., 2005; Buhs et al., 2006; Graham et al., 2003; Juvonen et al., 2000; Lopez & DuBois, 2005; Nishina et al., 2005; Paul & Cillessen, 2003; Schwartz et al., 2001; Schwartz et al., 2005). Furthermore, previous studies have found several individual and social factors that mediate the relation between peer victimization and academic success. For instance, Beran and Lupart (2005) examined the relationship between achievement and peer harassment using individual and peer characteristics as mediating factors. Using students drawn from the Canadian National Longitudinal Survey of Children and Youth (NLSCY), the authors found that adolescents who are harassed by their peers are at risk of experiencing poor achievement if they exhibit disruptive behavior problems and poor peer interactions. Similarly, Hanish and Guerra (2002) found bullied children likely experience low academic success when they perceive low social support and are struggling with additional adjustment problems. Thus, bullied children with

few or no friends, limited pro-social skills, and social-emotional and behavioral problems are particularly at-risk for academic failure, and these factors mediate the link between achievement and victimization.

The results of the present study indicate no significant direct relation between peer victimization and achievement, and confirm previous research findings. Furthermore, the current study found no significant relationship among peer victimization and academic motivation and self-concept. Since many students report being bullied (Beran & Tutty, 2002; O'Connell et al., 1997), they may consider the incident itself as "normal", or a common school experience. For these students, their sense of competence and general enjoyment and effort towards learning may not be impacted. Similarly, some children who are bullied may try to cope with negative feelings by actually increasing their academic effort (focusing more on schoolwork) as a method of escaping the victimization (Woods & Wolke, 2004). Other students, however, may be more vulnerable to these incidents and experience several other functioning difficulties. For these children, they may indeed experience impaired competence and motivation towards academic work if they also have few or no friends, limited prosocial skills, and behavior problems. As a result, these children may be likely to achieve minimal academic success.

Additionally, past research indicates that children of unsupportive, coercive, controlling and overbearing parents may be at an increased risk of being bullied (Beran & Lupart, 2005; Finnegan, 1998; Ladd & Kochenderfer-Ladd, 1998; Mohr, 2006). However, results of the present study indicate that children with low parental involvement in their education are not likely to be victimized at school. Student's perceptions of low parental participation and encouragement may not interfere with their ability to positively and constructively interact

with their peers. Perhaps these children have protective factors in their lives (i.e., pro-social skills, relationships with siblings and other family members, easy temperament, emotional intelligence, and talents and abilities) that offset the detrimental effects of low parental involvement and enable them to develop healthy peer relationships. Other children, however, may be more vulnerable to a lack of parental involvement and exhibit impaired social functioning at school. In addition to low parental involvement, these children may exhibit numerous risk factors that interfere with their ability to develop positive peer relationships (i.e., emotional and behavior problems, difficult temperament, and a lack of pro-social skills, relationships with other family members, and interests or hobbies). Indeed, victims are often described as irritable, disruptive and hurtful towards others, as well as anxious, sensitive and cautious (Coleman & Byrd, 2003; Macklem, 2004; Mahady Wilton, Craig, & Pepler, 2000; Schwartz, 2000).

The aforementioned results may be due, in part, to the sample of elementary students utilized in the current study. For instance, out of all the grades five and six students invited to participate, only a small proportion agreed (26%). Therefore, the results of the present study may not be representative of Canadian elementary students. Parents provided informed consent for these participating students, which in itself may reflect high parental involvement (i.e., talking to students about their day, going through students' school bags, and so on). It is plausible that victimized children in the present study generally had actively involved parents and thus had a sense of competence and motivation to perform well in school, and did not experience academic problems. Indeed, past research indicates that the link between achievement and victimization may be mediated by low social support (Beran & Lupart, 2005; Hanish & Guerra, 2002).

Summary

The present study simultaneously examined the relationships of individual, family and social factors with elementary students' academic achievement. Several significant interrelationships were found among students' achievement, academic motivation, self-concept and parental involvement. In particular, children with parents who do not actively participate in their education are likely to display low confidence in their abilities, show low motivation towards completing school assignments, and achieve minimal academic success. These observed relationships are highly consistent with Eccles' Expectancy-Value Theory and Model of Achievement-Related Choices.

In contrast, no significant relations were found among peer victimization and academic motivation, self-concept, parental involvement, and achievement. Many children who are bullied may consider the incident itself a common school experience, and their sense of competence and effort towards learning may not be impacted. Similarly, children who are bullied may try to cope with negative feelings by actually focusing more on schoolwork. Also children with low parental involvement in their education are not likely to be victimized at school. Perhaps students in the present study have protective factors in their lives that possibly offset the negative effects of low parental involvement and enable them to develop positive peer relationships. An alternative explanation is that victimized children in the present study generally had parents actively involved in their education and thus displayed a sense of competence and motivation towards learning, and did not experience academic problems.

Strengths, Limitations and Future Research

The current study adds to our understanding of elementary students' achievement by attempting to surpass the limitations in previous research. Indeed, results of the present

investigation extend the literature in numerous ways. First, the study collected two sources of information to assess factors related to students' achievement (i.e., student and teacher reports). This is compared to only one source of information frequently used in previous studies, which increases the reliability of the results found in the current investigation. Second, the method of analysis used in the current study was structural equation modeling, which is advantageous over other methods of measurement as it can calculate both direct and indirect effects of latent variables and reduce measurement error, which increases the reliability of the results.

Third, few research studies have attempted to simultaneously examine multiple correlates of achievement, and most have been conducted outside of Canada. Thus, the present study extends our current knowledge of school achievement by examining the complexity of the interrelationships between individual and family characteristics and their link to Canadian students' academic achievement. The results are logical and coincide with previous research on achievement, but also add to the research by indicating the magnitude of the interrelationships between each factor. Fourth, the present investigation adds to the research on peer victimization and achievement by identifying individual and family protective factors that may offset the detrimental effects of bullying and enable children to achieve academic success. The results extend our current knowledge of students most at risk for academic failure and identify those students who may benefit most from school intervention and policy.

Although the proposed model adds to the research of factors related to school achievement, certain limitations should be acknowledged and considered when interpreting the results. First, a relatively small proportion of students attending the selected elementary schools agreed to participate in the present study. Furthermore, the results of the study suggest that the participating students generally reported average levels of self-concept and academic

motivation and generally perceived average levels of parental involvement in their education. As a result, the applicability of the current findings to Canadian elementary students may be limited. Future research should simultaneously investigate the relations among achievement, academic motivation, self-concept, parental involvement, and peer victimization using a diverse and representative sample of Canadian elementary students. Second, in the proposed model students' self-concept is based on teachers' perceptions alone. That is, students' reports of their self-beliefs did not statistically fit with the proposed model and thus were not included in the analyses. Previous research has demonstrated a weak link between students' general self-concept and achievement, whereas a stronger association has been found between students' academic self-concept and achievement. Future research should attempt to supplement the present findings with multiple reports of students' academic self-beliefs to provide a more reliable measure of self-concept.

Third, the study focused on a specific number of factors as a simultaneous examination of every possible factor related to academic achievement was beyond the scope of the study. Clearly, the nature of academic achievement is complex, and it must be acknowledged that other variables are likely to be related to students' academic success. Future research should consider other factors such as students' intelligence, past achievement and level of emotional and behavioral functioning, family factors such as parenting style and socio-economic status, and school factors such as class size, teachers' level of expertise and school resources, as these factors have shown in the literature to be influential in students' school performance.

Lastly, the proposed model represents the interrelationships among academic achievement and individual and family characteristics of elementary students. Future research should

investigate whether these achievement-related factors predict the academic success of older students.

<div align="center">Implications for Interventions and Policy</div>

Results of the present study suggest several avenues for policy development and interventions that are aimed at improving the academic achievement of elementary students in Canada. With the proposed model, specific interventions can be designed to help improve students' underachievement and create the optimum learning environment that fosters the highest levels of achievement. First, the proposed model shows the importance of academic motivation and self-concept in the academic success of students. In particular, the data indicate that children who display a sense of competence and generally enjoy learning challenging academic tasks are likely to perform well in school. Furthermore, the data show high self-concept is related to high academic motivation. Based on these results, training programs and workshops for teachers should be aimed at creating positive learning environments that are mastery-based so that children gain a sense of accomplishment by successfully completing tasks. It is also important that these goals be challenging and realistic in order to maintain children's interest and focus, while enabling them to achieve success. In addition, training programs for teachers should emphasize strategies that focus on students' effort in addition to ability. Indeed, creating a classroom environment in which children are likely to develop a sense of competence and enjoy learning and hard work, may lead to a positive and successful academic experience. It is important to consider factors necessary to effectively implement supportive and caring classrooms. For instance, principals and school leaders must encourage and support teachers in the development of mastery-based classrooms. Furthermore, educating

parents regarding the significance of mastery-based classrooms and how to provide parental support is essential for teachers to effectively implement such positive learning environments.

Similarly, the proposed model suggests the importance of parental involvement in the academic success of students. Specifically, the data indicate that children of parents who actively promote learning in the home and have direct and regular contact with their education are likely to perform well in school. Furthermore, the data show high parental involvement is related to high student self-concept and motivation towards learning. Based on these results, training programs and workshops for teachers should also be aimed at facilitating communication with parents and actively encouraging parents to participate in their child's education. Also developing school policy that promotes parental involvement in children's education will support teachers in inviting parents to participate in school activities, as well as encourage parents to actively seek volunteer opportunities within the school. For example, parents could be involved in school activities by assisting teachers in the library, classroom, and on the playground, as well as attending field trips and organizing special events. In order to promote parental involvement in students' education, it is important to consider that many parents are not available to volunteer at their child's school during the day. Therefore, parents can be invited to participate in evening school activities such as band concerts, art shows, and family nights. Moreover, it is necessary for teachers to actively develop and maintain communication with parents through telephone calls and school planners or agendas.

Also based on the results of the present sample, parent education programs should be aimed at encouraging parents to promote and support children's learning in the home and school, as well as actively participating in children's school-related activities. For instance, parents could strengthen their support and involvement by being enthusiastic and positive

towards school, modeling positive learning behaviors, assisting with homework, providing

instruction on organization and study skills, and hiring tutors. Parent education programs may

be available through the schools and community family service agencies. Indeed, directly

teaching parents numerous skills and strategies to effectively communicate the importance of

an education and to take part in a child's academic progress, may ultimately improve a child's

sense of competence and motivation to succeed and lead to an enjoyable and successful school

experience. In order to effectively utilize parent education programs, it is important to consider

the impact of family and community socioeconomic status (SES). Specifically, it may be

difficult for low SES communities to financially provide extracurricular services such as parent

education programs. Furthermore, it may be difficult for low SES families to provide financial

support for such services. As a result, it is necessary for governments to participate in

enhancing community awareness of parent programs and to assist in the implementation of

parent education programs in Canada.

Additionally, the proposed model suggests that training programs and workshops for

school psychologists should emphasize the numerous risk and protective factors that influence

students at risk for academic failure, including academic motivation, self-concept and parental

involvement. For instance, psychologists could be educated on formal and informal assessment

techniques that identify critical factors in children's academic development, as well as effective

intervention strategies for the school, home, and community that promote academic success.

Indeed, identifying students at risk for academic failure and recommending appropriate

intervention strategies may optimize a child's academic development and lead to a successful

school experience. Thus, to accurately assess and identify at-risk students it is necessary for

psychologists to have the opportunity to assess the multiple factors that impact a child's

academic achievement (i.e., cognitive, behavioral, and social-emotional factors). Therefore, it is important for governments and school trustees to provide the financial support that is necessary for school psychologists to conduct comprehensive assessments of students.

In addition to professional training, school policy and parent education programs, individual and family counseling are recommended to improve students' sense of competence and effort towards learning. For instance, children could learn effective cognitive and behavioral strategies such as positive self-talk and goal setting to assist them in feeling competent and motivated to successfully complete school assignments. Counseling services may be available through the school and community family service agencies. Indeed, enhancing a child's awareness of the "inner conversation" and empowering a child with cognitive and behavioral strategies, may improve a child's sense of competence and effort towards schoolwork and ultimately lead to a positive academic experience. It is important for governments to participate in raising community awareness of counseling services and to assist in the implementation of services in communities and public schools.

Lastly, results of the present study suggest that protective factors may be important to offset the detrimental effects of bullying and enable victimized children to achieve success in school. School-wide bullying awareness and prevention programs should be implemented in order for students to learn in a supportive environment. It is essential for principals, teachers and support staff to actively monitor bullying in the classroom, playground, and on the school bus in order to effectively establish a safe, supportive and caring environment for all students.

In summary, results of the present study will provide information to parents, teachers, administrators, and school psychologists regarding factors that predict learning outcomes. In particular, the results of the study will enrich the awareness and understanding regarding the

individual and family factors related to achievement. As a result, prevention and intervention strategies must include a comprehensive range of services that include opportunities for school policy development, teacher training, parental education and counseling services. Moreover, with accurate screening programs and assessment strategies, school psychologists, administrators and teachers can direct specific support services to students who are at-risk and enhance the academic achievement of elementary students.

Conclusion

The current study contributes to our knowledge of elementary students' academic achievement and extends beyond the limitations in the literature by simultaneously examining individual, family and social factors that are related to academic success. Parental involvement in education, as well as students' self-concept and motivation towards learning are predictors of academic achievement. On the other hand, peer victimization is not related to the achievement of elementary students. The students most at-risk for school failure will likely experience negative effects from a combination of individual and family factors. Therefore, students with numerous negative factors should be identified and provided with additional support that simultaneously targets all levels.

Appendix A

Student Report of Academic Motivation

1. **I keep working on a problem until I understand it.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

2. **I do NOT enjoy learning.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

3. **I like to review work I already know.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

4. **I try to learn more about something that I don't understand right away, so that I will understand it.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

5. **I like to do easy assignments.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

6. **When I get bored, I look for new things to do.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

7. **I enjoy doing new work in school.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

8. **I DON'T like to work on new problems.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

9. **I DON'T like to do more school work than I have to.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

9. **I DON'T like to do more school work than I have to.**

   Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

10. **When I don't understand a problem, I give up right away.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

11. **When I don't understand something right away, I try to learn more about it so that I can understand it.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

12. **When I don't have new things to do in school, I get bored.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

13. **I DON'T like to find answers to questions.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

14. **When I know I have learned something new, I feel good inside.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

15. **When I get bored, I do NOT look for new things to do.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

16. **I get bored when I don't have new things to do in school.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

17. **I like to learn.**

    Strongly Agree   Agree·   Don't Know   Disagree   Strongly Disagree

18. **I do NOT feel good inside when I know I have learned something new.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

Teacher Report of Academic Motivation

1. **Keeps working on a problem until he/she understands it.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

2. **Does not enjoy learning.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

3. **Likes to review work he/she already knows.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

4. **Tries to learn more about something that he/she doesn't understand right away, so that he/she will understand it.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

5. **Likes to do easy assignments.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

6. **When he/she gets bored, he/she looks for new things to do.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

7. **Enjoys doing new work in school.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

8. **Doesn't like to work on new problems.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

9. **Doesn't like to do more school work than he/she has to.**

    Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

10. When doesn't understand a problem, he/she gives up right away.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

11. When doesn't understand something right away, he/she tries to learn more about it so that he/she can understand it.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

12. When doesn't have new things to do in school, he/she gets bored.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

13. Doesn't like to find answers to questions.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

14. Feels good inside knowing that he/she has learned something new.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

15. When bored, he/she does not look for new things to do.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

16. Is bored when he/she doesn't have new things to do in school.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

17. Likes to learn.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

18. Does not feel good inside when that he/she has learned something new.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

Appendix B

Student Report of Self-Concept

1. I like the way I look.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

2. I have a happy family.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

3. I DON'T sleep well.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

4. It's hard for me to do what's right.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

5. I know as much as the other children in my class.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

6. I'm happy with who I am.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

7. I DON'T feel as well as I should.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

8. It's hard for me to be around other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

9. I DON'T do well in school, even when I try.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

10. I really care about my family.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

11. I'm as nice as I should be.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

12. I DON'T feel happy when I'm with other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

13. It's hard for someone to be my friend.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

14. My family doesn't trust me.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

15. My teacher thinks I am smart.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

16. I get along well with other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

17. I hate myself.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

18. I'm NOT the person I would like to be.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

19. I am an honest person.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

20. I feel good most of the time.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

Teacher Report of Self-Concept

1. Likes the way he/she looks.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

2. Has a happy family.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

3. Doesn't sleep well.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

4. It's hard for him/her to do what's right.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

5. Knows as much as the other children in his/her class.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

6. Is happy with who he/she is.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

7. Doesn't feel as well as he/she should.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

8. It's hard for him/her to be around other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

9. Doesn't do well in school, even when he/she tries.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

10. Really cares about his/her family.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

11. Is as nice as he/she should be.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

12. Doesn't feel happy when he/she is with other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

13. It's hard for someone to be his/her friend.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

14. Family doesn't trust him/her.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

15. The teacher thinks he/she is smart.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

16. Gets along well with other people.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

17. Hates himself/herself.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

18. Is not the person that he/she would like to be.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

19. Is an honest person.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

20. Feels good most of the time.

Always True   Mostly True   Partly True & Partly False   Mostly False   Always False

Appendix C

Student Report of Parental Involvement

1. My parents think that they should NOT help me with my homework.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

2. My parents usually go to activities that I am involved in at school.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

3. Hard work is very important to my parents.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

4. My parents are NOT involved in school programs for parents.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

5. My parents try to get me to do my best on everything I do.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

6. When I ask for help with homework, my parents usually give it to me.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

7. My parents usually do NOT go to school activities.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

8. My parents think that succeeding in life is very important.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

9. My parents think I should go to university.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

10. My parents sometimes do volunteer work at my school.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

11. My parents have high hopes for my future.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

12. My parents usually go to parent-teacher conferences.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

13. When I get poor grades, my parents encourage me to try harder.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

14. My parents think that I am a good student.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

15. My parents take an interest in my activities.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

16. My parents do NOT think that I should help with decisions in our family.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

Teacher Report of Parental Involvement

1. Parents think that they should not help with homework.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

2. Parents usually go to activities that he/she is involved in at school.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

3. Hard work is very important to his/her parents.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

4. Parents are not involved in school parent programs.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

5. Parents try to get him/her to do his/her best on everything.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

6. When he/she asks for help with homework, the parents usually give it.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

7. Parents usually do not go to school activities.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

8. Parents think that succeeding in life is very important.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

9. Parents think he/she should go to university.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

10. Parents sometimes do volunteer work at the school.

> Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

11. Parents have high hopes for his/her future.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

12. Parents usually go to parent-teacher conferences.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

13. When he/she gets poor grades, the parents encourage him/her to try harder.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

14. Parents think that he/she is a good student.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

15. Parents take an interest in his/her activities.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

16. Parents do not think that he/she should help with family decisions.

Strongly Agree   Agree   Don't Know   Disagree   Strongly Disagree

Appendix D

Student Report of Peer Victimization

1. How often have you been bullied at school in the past couple of months?

   ___ I haven't been bullied at school in the past couple of months
   ___ it has only happened once or twice
   ___ 2 or 3 times a month
   ___ about once a week
   ___ several times a week

2. I was called mean names, was made fun of, or teased in a hurtful way.

   ___ I haven't been bullied at school in the past couple of months
   ___ it has only happened once or twice
   ___ 2 or 3 times a month
   ___ about once a week
   ___ several times a week

3. Other students left me out of things on purpose, excluded me from their group of friends, or completely ignored me.

   ___ I haven't been bullied at school in the past couple of months
   ___ it has only happened once or twice
   ___ 2 or 3 times a month
   ___ about once a week
   ___ several times a week

4. I was hit, kicked, pushed, shoved around, or locked indoors.

   ___ I haven't been bullied at school in the past couple of months
   ___ it has only happened once or twice
   ___ 2 or 3 times a month
   ___ about once a week
   ___ several times a week

5. Other students told lies or spread false rumors about me, and tried to make others dislike me.

   ___ I haven't been bullied at school in the past couple of months
   ___ it has only happened once or twice
   ___ 2 or 3 times a month
   ___ about once a week
   ___ several times a week

6. I had money or other things taken away from me or damaged.

_____ I haven't been bullied at school in the past couple of months
_____ it has only happened once or twice
_____ 2 or 3 times a month
_____ about once a week
_____ several times a week

7. I was threatened or forced to do things I didn't want to do.

_____ I haven't been bullied at school in the past couple of months
_____ it has only happened once or twice
_____ 2 or 3 times a month
_____ about once a week
_____ several times a week

8. I was bullied with mean names or comments about my race or colour.

_____ I haven't been bullied at school in the past couple of months
_____ it has only happened once or twice
_____ 2 or 3 times a month
_____ about once a week
_____ several times a week

9. I was bullied with mean names, comments, or gestures with a sexual meaning.

_____ I haven't been bullied at school in the past couple of months
_____ it has only happened once or twice
_____ 2 or 3 times a month
_____ about once a week
_____ several times a week

10. I was bullied in another way

_____ I haven't been bullied at school in the past couple of months
_____ it has only happened once or twice
_____ 2 or 3 times a month
_____ about once a week
_____ several times a week

In this case, please write in what way: _____

_____

Teacher Report of Peer Victimization

1. How often has he/she been bullied at school in the past couple of months?

    ___ has not been bullied at school in the past couple of months
    ___ it has only happened once or twice
    ___ 2 or 3 times a month
    ___ about once a week
    ___ several times a week

2. How often has he/she been called mean names, made fun of, or teased in a hurtful way.

    ___ has not been bullied at school in the past couple of months
    ___ it has only happened once or twice
    ___ 2 or 3 times a month
    ___ about once a week
    ___ several times a week

3. Other students left him/her out of things on purpose, excluded him/her from their group of friends, or completely ignored him/her.

    ___ has not been bullied at school in the past couple of months
    ___ it has only happened once or twice
    ___ 2 or 3 times a month
    ___ about once a week
    ___ several times a week

4. He/she was hit, kicked, pushed, shoved around, or locked indoors.

    ___ has not been bullied at school in the past couple of months
    ___ it has only happened once or twice
    ___ 2 or 3 times a month
    ___ about once a week
    ___ several times a week

5. Other students told lies or spread false rumors about him/her, and tried to make others dislike him/her.

    ___ has not been bullied at school in the past couple of months
    ___ it has only happened once or twice
    ___ 2 or 3 times a month
    ___ about once a week
    ___ several times a week

6. Had money or other things taken away from him/her or damaged.

___ has not been bullied at school in the past couple of months
___ it has only happened once or twice
___ 2 or 3 times a month
___ about once a week
___ several times a week

7. Was threatened or forced to do things he/she didn't want to do.

___ has not been bullied at school in the past couple of months
___ it has only happened once or twice
___ 2 or 3 times a month
___ about once a week
___ several times a week

8. Was bullied with mean names or comments about his/her race or colour.

___ has not been bullied at school in the past couple of months
___ it has only happened once or twice
___ 2 or 3 times a month
___ about once a week
___ several times a week

9. Was bullied with mean names, comments, or gestures with a sexual meaning.

___ has not been bullied at school in the past couple of months
___ it has only happened once or twice
___ 2 or 3 times a month
___ about once a week
___ several times a week

10. He/she was bullied in another way

___ has not been bullied at school in the past couple of months
___ it has only happened once or twice
___ 2 or 3 times a month
___ about once a week
___ several times a week

In this case, please write in what way: _____

References

Anderman, E. M., Eccles, J. S., Yoon, K. S., Roeser, R., Wigfield, A., & Blumenfeld, P. (2001). Learning to value mathematics and reading: Relations to mastery and performance-oriented instructional practices. *Contemporary Educational Psychology, 26*(1), 76-95.

Anderson, A. R., Christenson, S. L., & Lehr, C. A. (2004). Promoting student engagement to enhance school completion: Information and strategies for educators. In A. Canter, L. Paige, M. Roth, I. Romero, & S. Carroll (Eds.), *Helping children at home and at school* (pp. 63-146). Washington, D.C: National Association of School Psychologists.

Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review, 26,* 39-62.

Bendixen, M., & Olweus, D. (1999). Measurement of antisocial behavior in early adolescence: Psychometric properties and substantive findings. *Criminal Behavior and Mental Health, 9*(4), 323-354.

Bentler, P. M. (2004). EQS 6: *Structural Equations Program Manual.* Encino, CA: Multivariate Software.

Beran, T., Hughes, G., & Lupart, J. (in press). A model of achievement and bullying: Analyses of the Canadian national longitudinal survey of children and youth data. *Educational Research.*

Beran, T., & Lupart, J. (in press). The relationship between school achievement and peer harassment in Canadian adolescents: The importance of mediating factors. *School Psychology International.*

Beran, T. N., & Tutty, L. (2002). Children's reports of bullying and safety at school. *Canadian Journal of School Psychology, 17*(2), 1-14.

Bellmore, A. D., Witkow, M. R., Graham, S., & Juvonen, J. (2004). Beyond the individual: The impact of ethnic context and classroom behavioural norms on victims' adjustment. *Developmental Psychology, 40*(6), 1159-1172.

Bobbett, G. C., French, R. L., Achilles, C. M., & Bobbett, N. C. (1995, November). *An analysis of Nevada's report cards on high school.* Paper presented at the annual meeting of the Mid-South Educational Research Association Annual General Meeting, Biloxi, MI.

Boggiano, A. K., Shields, A., Barrett, M., Kellam, T., Thompson, E., Simons, J., et al. (1992). Helpless deficits in students: The role of motivational orientation. *Motivation and Emotion, 16*(3), 271-296.

Bond, L., Carlin, J. B., Thomas, L., Rubin, K., & Patton, G. (2001). Does bullying cause emotional problems? A prospective study of young teenagers. *British Medical Journal, 323,* 480.

Bouffard, T., Marcoux, M. F., Vezeau, C., & Bordeleau, L. (2003). Changes in self-perceptions of competence and intrinsic motivation among elementary schoolchildren. *British Journal of Educational Psychology, 73,* 171-186.

Boulton, M. J., Bucci, E., & Hawker, D. D. S. (1999). Swedish and English secondary school pupils' attitudes towards, and conceptions of, bullying: Concurrent links with bully/victim involvement. *Scandinavian Journal of Psychology, 40,* 277-284.

Broussard, S. C., & Garrison, M. E. B. (2004). The relationship between classroom motivation and academic achievement in elementary-school-aged children. *Family Consumer Sciences Research Journal, 33*(2), 106-120.

Buhs, E. S., Ladd, G. W., & Herald, S. L. (2006). Peer exclusion and victimization: Processes that mediate the relation between peer group rejection and children's classroom engagement and achievement. *Journal of Educational Psychology, 98*(1), 1-13.

Callaghan, S., & Joseph, S. (1995). Self-concept and peer victimization among schoolchildren. *Personal Individual Differences, 18*(1), 161-163.

Carney, J. V. (2000). Perceptions of peer abuse and suicidal behavior during adolescence. School Psychology International, 21(2), 213-223.

Cole, D. A., Maxwell, S. E., Martin, J. M., Peeke, L. G., Seroczynski, A. D., Tram, J. M., et al. (2001). The development of multiple domains of child and adolescent self-concept: A cohort sequential longitudinal design. *Child Development, 72*(6), 1723-1746.

Coleman, P. K., & Byrd, C. P. (2003). Interpersonal correlates of peer victimization among young adolescents. *Journal of Youth and Adolescence, 32*(4), 303-314.

Crick, N. R., Casas, J. F., & Ku, H. C. (1999). Relational and physical forms of peer victimization in preschool. *Developmental Psychology, 35*(2), 376-385.

Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology, 8*, 367-385.

Cronbach, L. J. (1984). *Essentials of psychological testing (4th ed.).* New York: Harper & Row Publishers.

Cullerton-Sen, C., & Crick, N. R. (2005). Understanding the effects of physical and relational victimization: The utility of multiple perspectives in predicting social-emotional adjustment. *School Psychology Review, 34*(2), 147-160.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Denissen, J. J. A., Zarrett, N. R., & Eccles, J. S. (2007). I like to do it, I'm able, and I know I am: Longitudinal couplings between domain-specific achievement, self-concept, and interest. *Child Development, 78*(2), 430-447.

Durik, A. M., Vida, M., & Eccles, J. S. (2006). Task values and ability beliefs as predictors of high school literacy choices: A developmental analysis. *Journal of Educational Psychology, 98*(2), 382-393.

Eccles, J. S. (1994). Understanding women's educational and occupational choices: Applying the Eccles et al. model of achievement-related choices. *Psychology of Women Quarterly, 18,* 585-609.

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., et al. (1983). Expectations, values and academic behaviors. In J. T. Spence (Ed.), *Perspective on achievement and achievement motivation* (pp. 75-146). San Francisco: W. H. Freeman.

Eccles, J. S., Roeser, R., Wigfield, A., & Freedman-Doan, C. (1999). Academic and motivational pathways through middle school. In L. Balter & C. S. Tamler-LeMonda (Ed.), *Child psychology: A handbook of contemporary issues* (pp. 287-317). Philadelphia: Psychology Press.

Ebel, R. L., & Frisbie, D. A. (1986). *Essentials of educational measurement* (4th ed.). Englewood Cliffs, NJ: Prentice-Hall.

Englund, M. M., Luckner, A. E., Whaley, G. J. L., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*(4), 723-730.

Espelage, D. L., & Swearer, S. M. (2003). Research on school bullying and victimization: What have we learned and where do we go from here? *School Psychology Review, 32*(3), 365-383.

Fan, X. (2001). Parental involvement and students' academic achievement: A growth modeling analysis. *Journal of Experimental Education, 70,* 27-61.

Fantuzzo, J. W., Davis, G. Y., & Ginsburg, M. D. (1995). Effects of parental involvement in isolation or in combination with peer tutoring on student self-concept and mathematics achievement. *Journal of Educational Psychology, 87*(2), 272-281.

Finnegan, R. A., Hodges, E. V. E., & Perry, D. G. (1998). Victimization by peers: Associations with children's reports of mother-child interaction. *Journal of Personality and Social Psychology, 75*(4), 1076-1086.

Fitts, W. H., & Warren, W. L. (1996). *Tennessee self-concept scale (2nd ed.).* Los Angeles, CA: Western Psychological Services.

Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex-typed domains. *Developmental Psychology, 38*(4), 519-533.

Fredricks, J. A., & Eccles, J. S. (2005). Family socialization, gender, sport motivation and involvement. *Journal of Sport Psychology, 27*(1), 3-31.

Freedman-Doan, C., Wigfield, A., Eccles, J. S., Blumenfeld, P., Arbreton, A., & Harold, R. D. (2000). What am I best at? Grade and gender differences in children's beliefs about ability improvement. *Journal of Applied Developmental Psychology, 21*(4), 379-402.

Fried, S., & Fried, P. (1996). *Bullies and victims: Helping your child survive the schoolyard battlefield.* New York: M. Evans and Company.

Frome, P. M., Alfeld, C. J., Eccles, J. S., & Barber, B. L. (2006). Why don't they want a male-dominated job? An investigation of young women who changed their occupational aspirations. *Educational Research and Evaluation, 12*(4), 359-372.

Garrity, C., Jens, K., Porter, W., Sager, N., & Short-Camilli, C. (1997). *Bully proofing your school.* Longmont, CO: Sopris West.

Gest, S. D., Domitrovich, C. E., & Welsh, J. A. (2005). Peer academic reputation in elementary school: Associations with changes in self-concept and academic skills. *Journal of Educational Psychology, 97*(3), 337-346.

Gonzalez-Pienda, J. A., Nunez, J. C., Gonzalez-Pumariega, S., Alvarez, L., Roces, C., & Garcia, M. (2002). A structural equation model of parental involvement, motivational and aptitudinal characteristics, and academic achievement. *The Journal of Experimental Education, 70*(3), 257-287.

Goldberg, M. D., & Cornell, D. G. (1998). The influence of intrinsic motivation and self-concept on academic achievement in second- and third-grade students. *Journal for the Education of the Gifted, 21*(2), 179-205.

Gonzalez-DeHass, A. R., Willems, P. P., & Holbein, M. F. D. (2005). Examining the relationship between parental involvement and student motivation. *Educational Psychology Review, 17*(2), 99-123.

Gordon Rouse, K. A. (2001). Resilient students' goals and motivation. *Journal of Adolescence, 24,* 461-472.

Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high school students. *Journal of Educational Psychology, 77,* 631-645.

Gottfried, A. E. (1986). *Children's Academic Intrinsic Motivation Scale.* Lutz, FL:

    Psychological Assessment Resources.

Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children.

    Journal of Educational Psychology, 82, 525-538.

Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (2001). Continuity of academic intrinsic

    motivation from childhood through late adolescence: A longitudinal study. *Journal of*

    Educational Psychology, 93, 3-13.

Gottfried, A. W., Gottfried, A. E., Cook, C. R., & Morris, P. E. (2005). Educational

    characteristics of adolescents with gifted academic intrinsic motivation: A longitudinal

    investigation from school entry through early adulthood. *Gifted Child Quarterly, 49*(2),

    172-186.

Graham, S., Bellmore, A., & Juvonen, J. (2003). Peer victimization in middle school: When

    self- and peer views diverge. *Journal of Applied School Psychology, 19,* 117-137.

Graham, S., & Juvonen, J. (2002). Ethnicity, peer harassment, and adjustment in middle

    school: An exploratory study. *Journal of Early Adolescence, 22,* 173-199.

Grills, A. E., & Ollendick, T. H. (2002). Peer victimization, global self-worth, and anxiety in

    middle school children. *Journal of Clinical Child and Adolescent Psychology, 31*(1),

    59-68.

Guay, F., Marsh, H. W., & Boivin, M. (2003). Academic self-concept and academic

    achievement: Developmental perspectives on their causal ordering. *Journal of*

    Educational Psychology, 95(1), 124-136.

Hanish, L. D., & Guerra, N. G. (2002). A longitudinal analysis of patterns of adjustment

    following peer victimization. *Development and Psychopathology, 14,* 69-89.

Harter, S. (1981). A new self-report scale of intrinsic versus extrinsic orientation in the

    classroom: Motivational and informational components. *Developmental Psychology,*

    17, 300-312.

Harter, S. (1985). *Manual for the self-perception profile for children.* Denver, CO: University

    of Denver.

Harter, S. (1998). The development of self-representations. In W. Damon (Ed.), *Handbook of*

    child psychology (pp. 553-617). New York: Wiley.

Howse, R. B., Lange, G., Farran, D. C., & Boyles, C. D. (2003). Motivation and self-regulation

    as predictors of achievement in economically disadvantaged young children. *The*

    Journal of Experimental Education, 71(2), 151-174.

Jacobs, J. E., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A. (2002). Changes in

    children's self-competence and values: Gender and domain differences across grades

    one through twelve. *Child Development, 73*(2), 509-527.

Jacobs, J. E., Vernon, M. K., & Eccles, J. S. (2004). Relations between social self-perceptions,

    time use, and prosocial or problem behaviors during adolescence. *Journal of Adolescent*

    Research, 19(1), 45-62.

Jeynes, W. H. (2005). Effects of parental involvement and family structure on the academic

    achievement of adolescents. *Marriage & Family Review, 37*(3), 99-115.

Juvonen, J., Nishina, A., & Graham, S. (2000). Peer harassment, psychological adjustment, and

    school functioning in early adolescence. *Journal of Educational Psychology, 91,* 349-

    359.

Kalliotis, P. (2000). Bullying as a special case of aggression: Procedures of cross-cultural

    assessment. *School Psychology International, 21,* 47-64.

Keith, T. Z. (1991). Parent involvement and achievement in high school. In S. B., Silvern

(Ed.), *Literacy through family, school, and community interaction* (pp. 125-141). US: JAI

Press.

Kelloway, K. E. (1998). *Using LISREL for structural equation modeling: A researcher's*

guide. California: Sage Publications.

Kline, R. B. (1998). *Principles and practice of structural equation modeling.* New York, NY:

Guilford Press.

Kochenderfer, B. J., & Ladd, G. W. (1996). Peer victimization: Manifestations and relations to

school adjustment in kindergarten. *Journal of School Psychology, 34*(3), 267-283.

Kochenderfer-Ladd, B., & Skinner, K. (2002). Children's coping strategies: Moderators of the

effects of peer victimization? *Developmental Psychology, 38*(2), 267-278.

Kochenderfer-Ladd, B., & Wardrop, J. L. (2001). Chronicity and instability of children's peer

victimization experiences as predictors of loneliness and social satisfaction trajectories.

Child Development, 72(1), 134-151.

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. (1997). Classroom peer acceptance,

friendship and victimization: Distinct relational systems that contribute uniquely to

children's school adjustment? *Child Development, 68,* 1181-1197.

Ladd, G. W., & Kochenderfer-Ladd, B. (1998). Parenting behaviors and parent-child

relationships: Correlates of peer victimization in kindergarten? *Developmental*

Psychology, 34(6), 1450-1458.

Lopez, C., & DuBois, D. L. (2005). Peer victimization and rejection: Investigation of an

integrative model of effects on emotional, behavioral, and academic adjustment in early

adolescence. *Journal of Clinical Child and Adolescent Psychology, 34*(1), 23-36.

Luster, T., Lekskul, K., & Oh, S. M. (2004). Predictors of academic motivation in first grade among children born to low-income adolescent mothers. *Early Childhood Research Quarterly, 19,* 337-353.

Macklem, G. L. (2004). *Bullying and teasing: Social power in children's groups.* New York: Kluwer Academic.

Magdol, L. (1992). *Factor for adolescent academic achievement.* University of Wisconsin-Madison Extension/Wisconsin Youth. Retrieved June 15, 2007, at http://www.cyfernet.mes.umn.edu/research/youthfut3.html

Mahady Wilton, M. M., Craig, W. M., & Pepler, D. J. (2000). Emotional regulation and display in classroom victims of bullying: Characteristic expressions of affect, coping styles and relevant contextual factors. *Social Development, 9*(2), 226-245.

Marchant, G. J., Paulson, S. E., & Rothlisberg, B. A. (2001). Relations of middle school students' perceptions of family and school contexts with academic achievement. *Psychology in the Schools, 38*(6), 505-519.

Marsh, H. W., Craven, R., & Debus, R. (1998). Structure, stability, and development of young children's self concepts: A multicohort-multioccasion study. *Child Development, 69,* 1030-1053.

McWayne, C., Hampton, V., Fantuzzo, J., Cohen, H. L., & Sekino, Y. (2004). A multivariate examination of parent involvement and the social and academic competencies of urban kindergarten children. *Psychology in the Schools, 41*(3), 363-377.

Mohr, A. (2006). Family variables associated with peer victimization: Does family violence enhance the probability of being victimized by peers? *Swiss Journal of Psychology, 65*(2), 107-116.

Mynard, H., Joseph, S., & Alexander, J. (2000). Peer-victimization and posttraumatic stress in adolescents. *Personality and Individual Differences, 29*, 815-821.

Nadeem, E., & Graham, S. (2005). Early puberty, peer victimization, and internalizing symptoms in ethnic minority adolescents. *Journal of Early Adolescence, 25,* 197-222.

Nansel, T.R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association, 285,* 2094-2100.

Neary, A., & Joseph, S. (1994). Peer victimization and its relationship to self-concept and depression among schoolgirls. *Personal Individual Differences, 16*(1), 183-186.

Nishina, A., Juvonen, J., & Witkow, M. R. (2005). Sticks and stones may break my bones, but names will make me feel sick: The psychosocial, somatic, and scholastic consequences of peer harassment. *Journal of Clinical Child and Adolescent Psychology, 34*(1), 37-48.

Nurmi, J. E., & Aunola, K. (2005). Task-motivation during the first school years: A person-oriented approach to longitudinal data. *Learning and Instruction, 15,* 103-122.

Obach, M. S. (2003). A longitudinal-sequential study of perceived academic competence and motivational beliefs for learning among children in middle school. *Educational Psychology, 23*(3), 323-338.

O'Connell, P., Sedighdilami, F., Pepler, D. J., Craig, W., Connolly, J., Atlas, R., et al. (1997). *Prevalence of bullying and victimization among Canadian elementary and middle school children.* (ERIC Document Reproduction Service No. ED 427 834).

Okpala, C. O., Okpala, A. O., & Smith, F. E. (2001). Parental involvement, instructional expenditures, family socio-economic attributes, and student achievement. *Journal of Educational Research, 95,* 110-115.

Olweus, D. (1989). Prevalence and incidence in the study of antisocial behavior: Definitions and measurement. In M. Klein (Ed.), *Cross-national research in self-reported crime and delinquency* (pp. 187-201). Dodrecht, Netherlands: Kluwer.

Pajares, F., Miller, M. D., & Johnson, M. J. (1999). Gender differences in writing self-beliefs of elementary school students. *Journal of Educational Psychology, 91,* 50-61.

Paul, J. J., & Cilessen, A. H. (2003). Dynamics of peer victimization in early adolescence: Results from a four-year longitudinal study. *Journal of Applied School Psychology, 12*(2), 24-43.

Paulson, S.E. (1994). Relations of parenting style and parental involvement with ninth-grade students' achievement. *Journal of Early Adolescence,* 14, 250-267.

Pereira, B., Mendonca, D., Neto, C., Valente, L., & Smith, P. K. (2004). Bullying in Portuguese schools. *School Psychology International, 25*(2), 241-254.

Reynolds, A. J. (1997). *The Chicago child-parent centers: A longitudinal study of extended early childhood intervention.* Discussion paper, no. 1126-97. Madison, Wisc: Institute for Research on Poverty.

Rigby, K. (2000). Effects of peer victimization in school and perceived social support on adolescent well-being. *Journal of Adolescence, 23,* 57-68.

Rios-Ellis, B., Bellamy, L., & Shoji, J. (2000). An examination of specific types of ijime within Japanese schools. *School Psychology International, 21,* 37-46.

Schwartz, D. (2000). Subtypes of victims and aggressors in children's peer groups. *Journal of Abnormal Child Psychology, 28*(2), 181-192.

Schwartz, D., Chang, L., & Farver, J. M. (2001). Correlates of victimization in Chinese children's peer groups. *Developmental Psychology, 37*(4), 520-532.

Schwartz, D., Farver, J. M., Chang, L., & Lee-Shin, Y. (2002). Victimization in South Korean

children's peer groups. *Journal of Abnormal Child Psychology, 30*(2), 113-125.

Schwartz, D., Gorman, A. H., Nakamoto, J., & Toblin, R. L. (2005). Victimization in the peer

group and children's academic functioning. *Journal of Educational Psychology, 97*(3),

425-435.

Schwartz, D., McFadyen-Ketchum, S. A., Dodge, K. A., Pettit, G. S., & Bates, J. E. (1998).

Peer group victimization as a predictor of behavior problems at home and in school.

Developmental and Psychopathology, 19, 87-99.

Sheldon, J. P., & Eccles, J. S. (2005). Physical and psychological predictors of perceived

ability in adult male and female tennis players. *Journal of Applied Sport Psychology,

17*(1), 48-63.

Shumow, L., & Miller, J. D. (2001). Parents' at-home and at-school academic involvement

with young adolescents. *Journal of Early Adolescence, 21,* 68-91.

Simpkins, S. D., Davis-Kean, P. E., & Eccles, J. S. (2006). Math and science motivation: A

longitudinal examination of the links between choices and beliefs. *Developmental

Psychology, 42*(1), 70-83.

Skaalvik, E. M., & Valas, H. (1999). Relations among achievement, self-concept, and

motivation in mathematics and language arts: A longitudinal study. *Journal of

Experimental Education, 67,* 135-139.

Skues, J. L., Cunningham, E. G., & Pokharel, T. (2005). The influence of bullying behaviors

on sense of school connectedness, motivation and self-esteem. *Australian Journal of

Guidance and Counseling, 15*(1), 17-26.

Smith, P. K., Cowie, H., Olafsson, R. F., Liefooghe, A. P. D., Almeida, A., Araki, H., et al. (2002). Definitions of bullying: a comparison of terms used, and age and gender differences, in a fourteen-country international comparison. *Child Development, 73*(4), 1119-1134.

Smokowski, P. R., & Kopasz, K. H. (2005). Bullying in school: An overview of types, effects, family characteristics, and intervention strategies. *Children & Schools, 27*(2), 101-110.

Solberg, M. E., & Olweus, D. (2003). Prevalence estimation of school bullying with the olweus bully/victim questionnaire. *Aggressive Behavior, 29*, 239-268.

Spinath, B., & Spinath, F. M. (2005). Longitudinal analysis of the link between learning motivation and competence beliefs among elementary school children. *Learning and Instruction, 15*, 87-102.

Stipek, D., & Ryan, R. (1997). Economically disadvantaged preschoolers: Ready to learn but further to go. *Developmental Psychology, 33*(4), 711-723.

Storch, E. A., Brassard, M. R., & Masia-Warner, C. L. (2003). The relationship of peer victimization to social anxiety and loneliness in adolescence. *Child Study Journal, 33*(1), 1-18.

Storch, E. A., & Esposito, L. E. (2003). Peer victimization and posttraumatic stress among children. *Child Study Journal, 33*(2), 91-98.

Storch, E. A., & Masia-Warner, C. (2004). The relationship of peer victimization to social anxiety and loneliness in adolescent females. *Journal of Adolescence, 27*(3), 351-362.

Storch, E. A., Masia-Warner, C., Crisp, H., & Klein, R. G. (2005). Peer victimization and social anxiety in adolescence: A prospective study. *Aggressive Behavior, 31*, 437-452.

Storch, E. A., Nock, M. K., Masia-Warner, C., & Barlas, M. E. (2003). Peer victimization and social-psychological adjustment in Hispanic and African-American children. *Journal of Child and Family Studies, 12*(4), 439-452.

Storch, E. A., Zelman, E., Sweeney, M., Danner, G., & Dove, S. (2002). Overt and relational victimization and psychosocial adjustment in minority preadolescents. *Child Study Journal, 32*(2), 73-79.

Valentine, J. C., DuBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta-analytic review. *Educational Psychologist, 39*(2), 111-133.

Verkuyten, M., & Thijs, J. (2002). School satisfaction of elementary school children: The role of performance, peer relations, ethnicity, and gender. *Social Indicators Research, 59*(2), 203-215.

Weiner, B. (1985). An attributional theory of achievement, motivation and emotion. *Psychological Review, 92,* 548-573.

Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational Psychology Review, 6,* 49-78.

Wigfield, A., & Eccles, J. S. (1992). The development of achievement task values: A theoretical analysis. *Developmental Review, 12,* 265-310.

Wigfield, A., & Eccles, J. S. (2000). Expectancy-value theory of achievement motivation. *Contemporary Educational Psychology, 25,* 68-81.

Wigfield, A., Eccles, J. S., Suk Yoon, K., Harold, R. D., Arbreton, A. J. A., Freedman-Doan,

    C., et al. (1997). Change in children's competence beliefs and subjective task values

    across the elementary school years: A 3-year study. *Journal of Educational Psychology,*

    89, 451-469.

Wilson, V. (1989). *Academic achievement and aptitude testing: Current practices and test*

    reviews. Austin, TX: Pro-Ed.

Wood, E. D., Dewit, D. J., Rye, B. J., & Stevens, L. A. (2000). Evaluating an in-

    school drug prevention program for at-risk youth. *Alberta Journal of Educational*

    Research, 46(2), 117-132.

Woods, S., & Wolke, D. (2004). Direct and relational bullying among primary school children

    and academic achievement. *Journal of School Psychology, 42,* 135-155.