

Theses and Dissertations

2013

Linking self-concept, social comparison and academic achievement in preadolescents

Leola Lanette Oliver

Follow this and additional works at: <https://digitalcommons.pepperdine.edu/etd>

Recommended Citation

Oliver, Leola Lanette, "Linking self-concept, social comparison and academic achievement in preadolescents" (2013). *Theses and Dissertations*. 317.
<https://digitalcommons.pepperdine.edu/etd/317>

This Dissertation is brought to you for free and open access by Pepperdine Digital Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Pepperdine Digital Commons. For more information, please contact bailey.berry@pepperdine.edu.

Pepperdine University
Graduate School of Education and Psychology

LINKING SELF-CONCEPT, SOCIAL COMPARISON AND ACADEMIC
ACHIEVEMENT IN PREADOLESCENTS

A dissertation proposal submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organizational Leadership

by

Leola Lanette Oliver

March 2013

Devin Vodicka, Ed.D. – Dissertation Chairperson

This dissertation proposal, written by

Leola Lanette Oliver

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Doctoral Committee:

Devin Vodicka, Ed.D., Chairperson

Jay Jackson, Ed.D.

Stuart Bernstein, Ed.D.

© Copyright by Leola L. Oliver (2013)

All Rights Reserved

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES	ix
ACKNOWLEDGEMENTS	ix
VITA	xii
ABSTRACT	xiv
Chapter One: Foundations of the Study	1
Problem Statement	5
Purpose of the Study	6
Research Questions	7
Importance of the Study	7
Delimitations of the Study	8
Limitations of the Study	9
Assumptions of the Study	9
Conceptual Hypothesis	10
Operational Definition of Terms	10
Organization of the Study	13
Chapter Two: Review of the Literature	15
Key Terms	18
Theoretical Considerations	19
Self-concept	25
Social Comparison	35
Achievement	40
Summary	47
Chapter Three: Methodology	53
Overview	53
Purpose of the Study	53
Research Questions	54
Research Design and Methodology	55
Subjects	56
Human Subjects Considerations	65
Instrumentation	68
Data Reporting and Analysis	73
Procedures	74
Methodological Assumptions	83

	Page
Limitations	84
Summary	84
Chapter Four: Results	86
Research Question One	88
Classroom-Average Achievement	92
Summary	114
Research Question Two	116
Summary	129
Research Question Three	130
Summary	136
Chapter Four Summary	137
Chapter Five: Conclusions and Recommendations	141
Summary of Results	142
Research Question One	143
Recommendations	148
Question Two Summary of Findings	154
Recommendations	157
Question Three Summary of Findings	158
Recommendations	160
Conclusion	163
REFERENCES	165
APPENDIX A: PEPPERDINE UNIVERSITY Research Study Participant Checklist...	174
APPENDIX B: Pepperdine University Graduate School of Education & Psychology School Recruitment Letter	176
APPENDIX C: Pepperdine University Graduate School of Education & Psychology Teacher Recruitment Letter	179
APPENDIX D: Participation Recruitment Flyer	181
APPENDIX E: Piers-Harris Children’s Self-Concept Scale Score Form	182
APPENDIX F: Iowa-Netherlands Comparison Orientation Measure, Modified	183
APPENDIX G: School Recruitment Phone Call Protocol.....	184
APPENDIX H: Minor Assent Form	185
APPENDIX I: Parental Informed Consent Letter.....	188

	Page
APPENDIX J: Research Study Protocol and Procedures	192
APPENDIX K: Permission from School District	195
APPENDIX L: IRB Training Completion Report	196
APPENDIX M: Research Assistant’s NIH Training Completion Certificate	198
APPENDIX N: Research Assistant’s IRB Training Completion Report	199
APPENDIX O: Flyer Soliciting Research Assistant	200
APPENDIX P: Letter of Offer for Non-University Sponsored Research Assistant Position	201

LIST OF TABLES

	Page
Table 1. Statistical Methods.....	54
Table 2. Measurement and Instrument Summary.....	69
Table 3. INCOM - Categorical Distribution of Items.....	71
Table 4. Correlation between Variables and Research Questions.....	72
Table 5. Mean Comparison of ELA and Math Scaled Scores.....	89
Table 6. ANOVA of Classroom-Average Achievement Classified by Teacher.....	89
Table 7. ANOVA ELA/Math Means Comparison by Gender.....	90
Table 8. ANOVA ELA/Math Means Comparison by Ethnicity.....	90
Table 9. Interpretation of Piers-Harris 2 T-Score Ranges.....	94
Table 10. Descriptive Statistics for Self-concept and its Subdomains.....	96
Table 11. S1 Correlations for Self-concept and ELA/Math Scaled Scores.....	98
Table 12. S2 Correlations for Self-concepts and ELA/Math Scaled Scores.....	99
Table 13. Linear Regression Model Summary for Goodness of Fit.....	111
Table 14. ANOVA Test of Assumptions for SSELA and <i>BEH</i> , <i>INT</i> , <i>POP</i> and <i>FRE</i>	111
Table 15. Correlation Coefficients Test of Assumptions.....	112
Table 16. Model Summary of Math Scaled Scores and SC Variables.....	113
Table 17. ANOVA Test of Assumptions for SSMath and SC.....	113
Table 18. Correlation Coefficients for SSMath and SC Variables.....	114
Table 19. Interpretation of Comparison Orientation Scaled Score Ranges.....	117
Table 20. Interpretation of Upward and Downward Scale Measures.....	122
Table 21. Correlations between Comparison Orientation (CO) & SC Variables.....	125

Table 22. Model Summary for CO with FRE and TOT as Independent Variables.....	127
Table 23. ANOVA to Determine Model Fit for CO with FRE and TOT.....	128
Table 24. Coefficients Test of Assumptions for CO with FRE & TOT.....	128

LIST OF FIGURES

	Page
Figure 1. 2010 API Scores – Between-school, district and state comparison.	59
Figure 2. 2011 API Scores – School, district and state comparison.	60
Figure 3. 2011 School #1 Elementary school demographic compositions.	61
Figure 4. 2010-11 School #2 Elementary School demographic compositions.	61
Figure 7. S1 – Mean comparison of TOT t-Scores by teacher.	102
Figure 8. S2 – Means comparison of TOT t-Scores by teacher.	102
Figure 9. S1 – Means comparison of INT t-scores by PLELA.	104
Figure 10. S1 – Means comparison of INT t-scores by PLMath.	104
Figure 11. S2 – Means comparison of academic self-concept (INT) by PLELA.	105
Figure 12. S2 – Means comparison of academic self-concept (INT) by PLMath.	105
Figure 13. S1 – Means comparison of BEH t-scores by PLELA.	106
Figure 14. S1 – Comparison of FRE mean t-scores by PLELA.	107
Figure 15. S1– Means comparison of FRE t-scores by PLMath.	108
Figure 16. Means comparison of ELA performance and POP t-scores.	109
Figure 17. Means comparison of math performance and POP t-scores.	109
Figure 18. Descriptive statistics histogram based on general CO scaled scores.	118
Figure 19. Descriptive statistics histogram based on general CO scaled scores.	119
Figure 20. S1 – Descriptive statistics histogram of CO by teacher.	120
Figure 21. S2 – Descriptive statistics histogram of CO by teacher.	121
Figure 22. S1 – Histogram showing academic self-concept scores (INT).	123
Figure 23. S2 – Histogram showing academic self-concept (INT) scores.	123

	Page
Figure 24. S1 – Mean upward comparison scaled score by PLELA.	131
Figure 25. S1 – Mean upward comparison scaled score by PLMath.....	131
Figure 26. S2 – Mean upward comparison scaled scores by PLELA.....	132
Figure 27. S2 – Mean upward comparison scaled scores by PLMath.....	132
Figure 28. S1 – Downward comparison by PLELA.....	Error! Bookmark not defined.
Figure 29. S1 – Means comparison of downward orientation by PLMath.....	134
Figure 30. S2 – Means comparison of downward orientation by PLELA.....	135
Figure 31. S2 – Means comparison of downward orientation by PLMath.....	135
Figure 32. Flexible groups based on attributional style and performance level.	157

ACKNOWLEDGEMENTS

The journey toward completion of this dissertation was, in large part, made possible by the support, patience and encouragement from many individuals. First, I would like to express my most sincere gratitude to my mother, Gwendolyn R. Oliver, and late father, David Lee Oliver, Sr., whose love, upbringing and teachings of the importance of possessing a strong work ethic provided me with the intrinsic motivation and perseverance to reach far beyond the limits of my perceived abilities. Next, I wish to thank my family members who have always expressed belief in me and never hesitate to let me know how proud they are of my goals and aspirations. I also wish to thank all my colleagues, professors and mentors, from whom I have learned a great deal about teaching, learning and leadership. In addition, I am grateful to all of my friends for understanding the scope and magnitude of this work and appreciating my need to focus throughout this lengthy process. I wish to extend a sincere thank you to my research assistants, Lenice Garcia and Kristin Oliver, as well as to my alternate, Miriam Almestica. Next, I would like to thank the Veteran's Administration for providing the financial support and resources that made it logistically possible to complete the study. Finally, my sincere appreciation goes to my chair, Dr. Devin Vodicka, for his supportive guidance and leadership, as well as being instrumental to the development of my knowledge of statistical calculation methods. A special thank you is owed to the program chair, Dr. Linda Purrington, and two committee members, Dr. Jay Jackson and Dr. Stuart Bernstein, for their thoughtful insights, patience, helping me to think beyond the data, and for encouraging me to consider additional scholarship opportunities.

VITA

EDUCATION

Pepperdine University Ed.D. in Educational Leadership Administration and Policy	2012
Pepperdine University M.S. in Educational Leadership and Administration PAR: Parent Perceptions of School Climate	2008
Pepperdine University M.A. in Education Multiple Subjects Teaching Credential Authorization: CLAD	2003

HONORS / AWARDS

Pepperdine Merit-based Academic Scholarship	January 2003
Pepperdine Merit-based Academic Scholarship	January 2008
<i>“Lessons from Successful Charter School Leaders”</i> Guest speaker/presenter at the Pepperdine University Leadership Symposium, Los Angeles, CA	2009

TEACHING EXPERIENCE

Pepperdine University Adjunct Professor: “Professional Identity and Leadership”	2012-Present
University of Phoenix Associate Faculty: “Instructional Methods for English Language Learners”	2012-Present
Pepperdine University Adjunct Professor: “Identity, Inquiry and Vocation”	2011 - 2012
University of Phoenix Associate Faculty: “Language Acquisition for Secondary Learners”	2011 - 2012
Global Education Academy Lead Teacher/Coordinator	2007 - 2008
Compton Unified School District Elementary Teacher: Fifth Grade	2003 - 2007

RELATED EXPERIENCE

Green Dot Public Schools Mentor	2011-Present
Global Education Academy Assistant Principal / Principal January 2010	2008-2010 –

United States Army Military Intelligence Branch
Korean Linguist / Interrogator

1996 – 2000

LANGUAGES

English – native language

Korean – speak, read and write, some

Spanish – speak, read and write some

MEMBERSHIPS

ACSA, ACSD, NEA, NAESP, Phi Delta Kappa International

ABSTRACT

A wide body of literature exists on the relationship between childhood and adolescent self-concept and achievement (Molloy, Gest, & Rulison, 2011; Trautwein, Ludtke, Marsh, & Nagy, 2009); however, few studies explore the extent to which other socio-psychological processes interact with these 2 variables. Many studies point to parent and teacher feedback as critical factors in the development of self-evaluative processes in children, but there is an absence of literature exploring the extent to which perceptions of peer achievement and social interactions may predict self-concept (Altermatt, Pomerantz, Ruble, Frey, & Greulich, 2002). A growing number of theorists assert that the self-concept/achievement relationship must be examined within the context of the social environment (Guay, Boivin, & Hodges, 1999; Rogers, Smith, & Coleman, 1978). What is yet to be explored with more in-depth analysis, however, is whether a relationship exists between children's perception of themselves and the level of performance exhibited by their peers (Guay et al., 1999). In an effort to shed light on this subject the present study seeks to identify any correlation between self-concept, social comparison processes, and academic achievement through the lens of the following theoretical constructs: (a) Self-Concept and Self-Theory; (b) Social-Comparison Theory; and (c) Achievement Goal and (d) Social Identity Theories.

Social comparison theory and its role in self-evaluation were first promulgated in the 1950s. This theory proposes that individuals seek accurate appraisals of self and engage in comparison to others in the absence of objective feedback (Festinger, 1954). Finally, achievement is explored in connection with achievement goal theory and in context with social identity theory. Achievement goal theory holds that individuals

possess an awareness of their abilities and, as a result, adopt relative goal theories associated with achievement behaviors.

Each of the foregoing theoretical constructs has implications for an enlarged focus on the development of childhood self-concept, socialization processes and their relationship to academic achievement. This study will add to a growing body of literature exploring potential links between peer social comparison processes, global and academic self-concept, and achievement.

Chapter One: Foundations of the Study

“Next to the home, the school is the single most important force in shaping the child’s self-concept” (Purkey, 1970, p. 40). The relationship between self-concept and achievement has been well documented in a number of studies (Marsh & Yeung, 1997; O’Mara, Marsh, Craven, & Debus, 2006). Self-concept is described as one’s self-perceptions developed through a variety of interactions and experiences within the social environment, especially the evaluative feedback received by influential others (Byrne & Shavelson, 1996). Self-concept is regarded by some social researchers as a principal determinant of academic achievement (Marsh & Hau, 2003). The distinction that self-concept is multifaceted and hierarchical in nature is a deviation from traditional approaches that treated self-concept as a universal or global construct (Marsh & Shavelson, 1985). Since the literature and theory point to a reciprocal relationship between self-concept and achievement, there are positive benefits to targeting specific domains of self-concept and related achievement behaviors (Marsh & Craven, 2006; O’Mara et al., 2006). One such domain, academic self-concept, is defined as the perception of one’s academic ability based on past experiences, evaluative feedback from influential others, and social comparison processes (Eccles & Wigfield, 2002). In addition to exploring self-concept, universally, this study shall examine academic self-concept and its socio-environmental construct, as it has been posited to be specifically related to “academic achievement, persistence, coursework selection, and long-term educational aspirations” (Marsh & Hau, 2003, p. 365).

Many researchers have examined peer influence and its relationship to a statistically significant loss of self-concept as children age, with the decline becoming

more pronounced during adolescence and school level transitions (Asplough, 2001; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). Some researchers attribute this decline in self-concept and achievement over time to a complex system of social interactions with peer groups (Gest, Domitrovich, & Welsh, 2005; Ryan, 2001; Wentzel, 2005). There is considerable evidence to suggest that peer groups provide an exchange of attitudes, beliefs, and behaviors that either support or inhibit goal aspiration and attainment; facilitate achievement by providing help, guidance and feedback; and provide a safe and affective environment (Guay et al., 1999; Schunk, 1987; Wentzel, 2005).

Various researchers have linked self-evaluation, based on peer associations, to academic achievement (Ryan, 2001; Véronneau, Vitaro, Brendgen, Dishion, & Tremblay, 2010). The concept that children and adolescents engage in social comparison, or calibrate self-judgments of competence based on the individual's perception of peer performance levels, has been advanced by a number of studies (Guay et al., 1999; Rogers et al., 1978). A significant amount of literature targets the early adolescent years as a critical developmental stage for self-concept, contending that there are few problems associated with self-concept in childhood (Blackwell, Trzesniewski, & Dweck, 2007). In contrast, while stronger influential effects of changes in self-concept in relation to social comparison processes have been reported in seventh grade, researchers have documented similar, but less pronounced, evidence among fifth-grade students (Molloy et al., 2011). Other investigations have found significant support for the examination of developmental differences with respect to social comparison processes in younger students (Guay et al., 1999; Marsh, Trautwein, Lüdtke, & Köller, 2008), even though relatively few studies have focused their efforts in this direction (France-Kaatrude & Smith, 1985; Guay et al.,

1999). With investigations involving social comparison's effects on academic self-concept, it is important to make the distinction as to what information is being used as the basis for comparative evaluation (Marsh et al., 2008). Trautwein et al. (2009) explain:

In the BFLPE (big-fish-little-pond effect), students are posited to use a generalized other as an implicit basis of comparison. This generalized other is operationalized as the mean performance level of other students in the same class or school. The process is implicit in that students are not explicitly instructed to make comparisons with other students. (p. 511)

In the Trautwein et al. (2009) study, the examination of comparison orientation is not based on targeted comparisons with selected peers. Instead, the focus of the study was concerned with the effects of social comparison processes involving generalized others, or imposed social groups. Consistent with this approach, an early study using a sample of 159 underachieving students, Rogers et al. (1978) found that the development of self-concept is heavily dependent on the social group to which the individual is assigned. Rogers et al. found that when classes were organized according to ability (low, medium, or high) in a homogenous, rather than a mixed or heterogenous, manner, there was a strong relationship between academic achievement and self-concept. In addition, the researchers concluded that when a child compares him/herself to others, a favorable result leads to enhanced self, and an unfavorable result tended to predict diminished self-concept. These findings support further investigation with a more generalized population as well as investigating reform efforts aimed at mitigating the effect of negative self-concept in classroom settings.

In exploring the role of social comparison in connection with the relationship between academic self-concept and achievement, several distinctions must be made. Self-concept is based on self-perceptions of one's abilities, influenced by interactions within the context of the social environment and evaluative feedback of significant others (Shavelson & Bolus, 1982). Academic self-concept is based on the same premise with the additional distinction that it refers to one's perception of his/her academic competencies (Harter, Waters, & Whitesell, 1998). Academic self-concept is a critical component to consider as it is a predictor of expectations for success as well as attitudes and values toward academic achievement (Eccles & Wigfield, 2002). Various researchers have linked self-evaluation based on peer association to academic achievement (Ryan, 2001; Véronneau et al., 2010; Wentzel, 2005). The early adolescent years have been the focus of most prominent studies in the self-concept/achievement domains; however, there is growing support for future studies that explore developmental differences in social comparison processes during childhood (Molloy et al., 2011).

Many researchers argue that no investigation of the self-concept/achievement relationship can be adequate without considering socio-environmental factors and the role of socialization processes on the formulation of academic self-concept, such as social comparison. Marsh and Hau (2003) advanced the concept of the big-fish-little-pond effect (BFLPE) to explain the premise that students use the academic performance of their peers as a basis for comparison in formulating beliefs about their own academic ability. In their investigation, the researchers found that academic self-concept is affected negatively by school-average achievement, meaning that students of equal ability will have lower academic self-concept in high-achieving school environments, and

conversely, will have higher academic self-concept in a lower-performing school. To this end, the researcher for the present study makes the distinction between socialization processes of the individual (peer target comparison) and generalized-others (group-level comparison), choosing to explore the effect of social comparison based on perceived group-level achievement on academic self-concept.

Researchers have emphasized the importance of conducting self-concept/academic achievement studies through the lens of theoretical models to avoid conceptual weakness and results that obscure or ignore existing relationships (Rogers et al., 1978). The researcher of the present study is sensitive to the theoretical frameworks and unique qualities of the immediate social environment; therefore, the study will employ a quantitative research strategy, employing a deductive approach in the collection and analysis of data to test the relative theoretical assertions.

Problem Statement

Many urban schools are faced with critical decisions with respect to how to organize classrooms and learning experiences in school environments where there is wide stratification of within-class and within-school achievement levels. The social environment has been regarded as a critical factor in the development of childhood and adolescent self-concept (Ryan, 2001). Over the past two decades, a number of studies have linked self-concept and academic achievement, yet very few studies have explored the socialization processes (i.e., social comparison) inherent in the immediate school environment, which may help clarify the relationship between the two variables (Guay et al., 1999). Additionally, precious little research has employed theoretical models to

evaluate the socialization processes that may contribute to self-concept and achievement (Rogers et al., 1978).

A number of studies have found that the socio-environmental setting is a key contextual factor in the formation of the evaluative judgment of one's own academic competencies (Guay et al., 1999; Trautwein et al., 2009). A significant problem is that the most prominent studies that do examine self-concept and achievement within the context of the social environment involve cross-national designs with older youth or adult subjects providing the basis for findings. Unfortunately, the pooling of massive amounts of data from multi-national schools may not adequately represent the distinct character of today's local school environments (Marsh et al., 2008; Marsh & Hau, 2003; Molloy et al., 2011). A number of social psychology researchers have postulated that examinations of self-concept and academic achievement must be considered within the context of other socialization processes that are unique to each school environment. They argue that an adequate assessment must not ignore the socio-environmental frames of reference (Marsh et al., 2008). Researchers have argued that the relationship between self-concept and achievement is largely impacted by how one perceives his/her abilities compared to others in the immediate social group (Rogers et al., 1978). Understanding how socialization processes interact with one's perceptions of his/her abilities is critical to understanding the extent to which, if at all, such processes bear a distinct relationship with student achievement.

Purpose of the Study

There are two facets to the purpose of this study: (a) to explore the average classroom and average school achievement trends as measured by the California

statewide accountability system mandated by the No Child Left Behind Act of 2001; and (b) to identify correlations, if any, between self-concept, average classroom/school achievement, and social comparison processes in fifth grade students in an urban school setting. Consistent with earlier findings, the researcher for the present study expects that the relationship between academic achievement and self-concept will be most evident when examined in the context of the classroom setting (Rogers et al., 1978).

Research Questions

The following questions will form the basis for this study:

1. To what extent, if at all, does a statistically significant relationship exist between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do any between-school differences exist in the relationship between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do any within-school differences exist in the relationship between self-concept and academic achievement among fifth grade students?
2. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and self-concept?
3. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and academic achievement?

Importance of the Study

This study is important in that it allows school leaders to gain further insight into the relationship between the social environment, student attitudes and beliefs about

competence, and achievement outcomes unique to their own school environments (Trautwein et al., 2009). This research is unique in that it emphasizes the immediate social environment, unlike many of the massive, cross-national, quantitative studies that pool together a massive amount of data. This study provides insight into the self-perceptions, attitudes, and beliefs about an individual's competence and abilities in the realm of his/her social sphere of influence. Additionally, the study's focus on social comparison processes adds to the growing body of research recognizing the social environment as a major factor in the development of global and academic self-concept. The study's findings will provide district leaders, school-site leaders, and teachers with information that will support decision-making with respect to determining appropriate organizational and instructional strategies for particular learning groups. In addition, the results may inform school leaders' decisions regarding whether to implement socio-cognitive intervention programs designed to enhance academic self-concept.

Delimitations of the Study

This study is delimited to one urban district in Southern California and four within-district elementary schools. The study is further delimited to fifth-grade students of low or middle-class socio-economic status, evidenced by the number of students receiving free or reduced price lunch. In addition, this study is delimited to schools that do not necessarily appear on the CDE's Similar Schools Index (schools sharing similar demographic characteristics represented by all indicators). Finally, this study is further delimited to students who are predominantly ethnic minorities.

Limitations of the Study

While this study will provide a number of findings that will add to the literature on the role of social comparison in the relationship between self-concept and achievement, there are several limitations worthy of mention. First, the present study is based on a cross-sectional design, rather than longitudinal. Longitudinal designs allow the researcher to point out potential causality, as well as trends and patterns with respect to changes in self-concept over time and may answer many questions concerning motivation and achievement-related behaviors. Another limitation to this study is that it uses only self-report data. There are certain disadvantages associated with using self-completion questionnaires. The disadvantages include the inability of the researcher to prompt students having difficulty with understanding questions, respondent fatigue, and the inability to determine if literacy is an issue for some respondents. Another limitation of this study has to do with the research design itself. In cross-sectional studies, internal validity has been determined to be weak. According to Bryman (2008), “Cross-sectional research designs produce associations rather than findings from which causal inferences can be unambiguously made” (p. 46). Finally, this study is limited to the participation of schools based on the approval and selection of the district’s superintendents, as well as those principals who are willing to enlist the participation of teachers and students.

Assumptions of the Study

The researcher assumes that the quantitative data consisting of test scores in reading and math, based on California’s Standardized Testing and Reporting (STAR) system, is a valid and reliable assessment of student achievement. In addition, the researcher for the present study assumes that the fourth and fifth grade teachers serving as

expert reviewers of the Iowa-Netherlands Comparison Orientation Measure (INCOM) are qualified to determine grade-level suitability of the questions included in the survey.

Finally, the researcher assumes that the participants reflect the characteristics and demographic make-up of students in urban school districts, in general, and constitute an appropriate representative sample.

Conceptual Hypothesis

The researcher hypothesizes that self-concept will depend, largely, on average classroom and school achievement. The second hypothesis suggests that even when individual achievement is equal, students assigned to the classroom with higher class-average achievement will exhibit higher academic self-concept. The third hypothesis suggests that even when individual achievement is equal, students assigned to a class or school with low class-average achievement will exhibit lower academic self-concept. Consistent with the findings of Marsh et al. (2008), these hypotheses are based on the assumption that when there are distinct differences in class-average and school-average achievement, similar effects in academic self-concept will exist.

Operational Definition of Terms

Academic Performance Index (API): API reflects individual school and district performance in accordance with California state accountability measures. The API is represented as a number ranging from 200-1,000, which is indicative of the level of performance of individual students, demographic sub-groups, schools, and districts (California Department of Education [CDE], 2011).

Academic Yearly Progress (AYP): AYP reflects a series of academic goals in the form of performance targets, established in accordance with Title I of the Elementary and Secondary Education Act (ESEA) mandates (CDE, 2011).

Subgroups: Subgroups included in API reporting are based on ethnic/racial background, low socio-economic status, Students with Disabilities (SWD), and English Learner (EL) status (CDE, 2011).

Social Comparison Theory: It is widely accepted among social psychologists that individuals become increasingly susceptible to the effects of peer influence during adolescence (Buhs, Ladd, & Herald, 2006; Ryan, 2001). Social comparison theory, borne out of social identity theory, describes an individual's need to receive accurate assessments of one's qualities and abilities. In the absence of such objective feedback, an individual will engage in comparison with others of similar status (Elliot & Dweck, 2005). The terms *socialization* and *social comparison* are used interchangeably to describe the process by which children and adolescents become more similar to their peers through social comparison (Molloy et al., 2011). The impact of social comparison depends, in large part, on the attributes of the group with which the individual identifies (Guay et al., 1999). For example, identification with a low-performing group or individual may have a positive impact on self-evaluation of competence (also known as upward comparison), while identification with high-performing group or individual may negatively impact self-evaluation (also known as downward comparison) due to feelings of inferiority (Marsh et al., 2008). As adolescents become more concerned with social standing, it is reasonable to assume that individuals will engage in social comparison to make evaluative judgments of their own competence. In general, the research supports a

relationship between self-concept and academic achievement in childhood and adolescence; however, there is room for further investigation as to whether social comparison yields a distinct relationship to self-concept and academic achievement.

Self-Concept: Marsh and Shavelson (1985) define self-concept as an individual's experiences and interactions within his/her social environment, influenced by evaluative feedback. Some researchers contend that the social environment and an individual's perception of his/her status within and among peer groups can contribute significantly to the formation of subjective self-beliefs about competence and intelligence (Ryan, 2001). Early investigations have examined school environments and their impact on the development of self-concept (Rogers et al., 1978). Findings in both early and contemporary studies point to a positive relationship between academic reputation, self-concept, and achievement (Gest et al., 2005; Rogers et al., 1978). These studies have shown that when evaluative feedback based on academic competence is positive, self-concept and achievement-related behaviors are distinctively positive.

Self-Theory: Carl Rogers advanced the notion of self through his lectures and writings between 1947 and 1969, espousing the belief that the self is central to an individual's behavior and adaptive qualities (Purkey, 1970). Supporting this general principle, Ahmavaara and Houston (2007) suggested that an individual's academic behaviors, goal-orientation, aspirations, and motivation are related to their self-beliefs of intelligence. Some theorists describe these beliefs as self-theories of intelligence and divide them into two different categories: entity and incremental (Dweck & Molden, 2005). Individuals holding an entity theory of intelligence believe that intelligence is inherently fixed while those possessing an incremental theory believe that intelligence is

expandable and can be intensified through effort. For the present study, self-theory of intelligence is included as an additional framework for discussion and analysis of self-concept and will not be measured.

Achievement-Goal Theory: Two distinct theories exist in the achievement domain: *performance goal theory* and *mastery goal theory*. Performance goal theory describes an individual's interest in proving or demonstrating competence, while mastery goal theory refers to the desire to develop one's knowledge or competence. These two theoretical constructs have relevance to the high-stakes testing (HST) environment present in modern educational settings (Ryan & Brown, 2005). The present study will consider achievement-goal theory as a basis for discussion of academic self-concept and achievement outcomes.

Social Identity Theory: Abrams and Hogg (1990) describe social identity theory as the knowledge and value that an individual attaches to membership in certain social groups, and the meaning or emotional value one attaches to the status of his/her membership. The individual develops beliefs about the self, as well as social behaviors, through a series of encounters and interactions (Abrams & Hogg, 1990).

Organization of the Study

The present proposal is divided into three chapters. The first chapter provides background information relate to the historical and theoretical frameworks that form the basis and foundations for the study. Chapter one establishes the importance of studying the relationship between self-concept and achievement of fifth graders in the context of social comparison processes in a macro-social environment.

Chapter two provides a comprehensive review of the literature, including a brief historical and theoretical summary of the research variables and related concepts, as well as an examination of various studies involving self-concept, achievement and social comparison as variables.

Chapter three describes the research design and methodological approach to the study. This chapter contains a description of the participants, consent procedures, and human subject considerations. In addition, this chapter reiterates the research questions, provides a summary of the instruments to be used, and outlines the procedures to be followed in conducting the study.

Chapter Two: Review of the Literature

Self-concept is arguably one of the most significant concepts for researchers and educators to consider when exploring factors that contribute to academic outcomes and school achievement (Jacobs et al., 2002; Marsh, Byrne, & Yeung, 1999; Marsh & O'Mara, 2008; Purkey 1970). Self-concept, developed through interactions and experiences within the immediate social environment, is widely accepted as a significant element in the development of one's perception of his or her competence and abilities (Harter et al., 1998; Marsh et al., 2008; Trautwein et al., 2009). Many studies support the notion that peers play a significant role in the social and cognitive development of children and adolescents (Marsh et al., 2008; Molloy et al., 2011; Ryan, 2001); however, few studies have explored the socialization processes that may help clarify the relationship between academic self-concept and perceptions of peer achievement (Guay et al., 1999; Ryan, 2001). The purpose of this literature review is to explore the literature and studies that explore the relationship between self-concept, individual, average-classroom and average-school achievement in the context of the immediate social environment and social comparison processes.

The role of peer influence in the social environment and the development of academic self-concept have received much attention. A number of studies have postulated that certain aspects of peer associations serve as predictors of academic motivation and goal pursuits (Wentzel, 2005, p. 291). Other studies have explored the role of peer influence in the development of academic self-concept; however, very little research in this area has been linked to social psychology's theoretical frameworks (Rogers et al., 1978). Additionally, the body of empirical investigations tends to be

represented by large-scale cross-national studies that concentrate on self-concept in adolescents and young adults, while relatively few studies have examined potential developmental differences in the relationship between peer socialization processes and student achievement in childhood. This review sheds light on the relationship between academic self-concept, the socialization process of social comparison, and academic achievement through the lens of social comparison, social identity and self-theories. The present study builds upon previous findings that suggest a positive relationship between self-concept and childhood socialization processes.

This review explores the relevant research and literature on the relationship between self-concept and peer influence as a result of social comparison, and academic achievement. The research surrounding childhood and adolescent perceptions of self acknowledges that the school environment plays a significant role in the formation of childhood and adolescent self-concept and beliefs about competence (Campbell, 1971; Guay et al., 1999; Molloy et al., 2011). Children spend a great deal of time with their peers in classrooms and in school environments that foster competition by design. Ever since the No Child Left Behind (NCLB) act was enacted in 2001, local and state governments have placed more and more pressure on school officials to have their students to perform to the federal government's mandated standards. As schools strive to attain the goal of 80% proficiency in reading and math by the year 2014, educators have not had the luxury to expend valuable resources exploring socio-cognitive developmental theory. This review will offer educators, social psychologists, and education policy makers increased knowledge of the manner and extent to which the social environment

bears a distinct relationship to global and academic self-concept and academic achievement in an urban school setting.

Many researchers have examined various socio-environmental factors in connection with self-concept and academic achievement without making reference to the theoretical frameworks associated with social psychology. This review explores literature with an emphasis on social psychological theory as it relates to each variable. Self-concept is examined, in part, through the lens of self-theory for the purpose of discussion and analysis. Literature exploring peer influence via socialization processes and their potential link to self-concept and achievement is examined within the context of social comparison theory. In addition, achievement theory is explored in connection with social identity theory as a frame of reference for discussion and analysis. The majority of the studies and investigations explored in this review were conducted under longitudinal designs with data collection occurring over a number of years.

This review seeks to illuminate theoretical frameworks to consider in exploring social intervention models for the enhancement of self-concept in preadolescence. Accordingly, this review will examine the variables of self-concept, social comparison orientation, and achievement through the lenses of the following theoretical perspectives: (a) self-theory, (b) social comparison theory, (c) achievement goal theories, and (d) social identity theory. The initial review of the literature exploring the relationship between childhood and adolescent self-concept, social environments, and student achievement revealed that the underlying themes were either implicitly or explicitly linked to one or more of the aforementioned theories.

First, this review will provide a brief historical review of the origins and significance of each theoretical framework. The historical sequence will be followed by an examination of studies that explore links between self-concept, peer influence by means of socialization processes, and academic achievement, and their findings, all discussed within the framework of the aforementioned theories.

Key Terms

A search of the EBSCO Host and Academic Search Elite databases resulted in the retrieval of literature on the topics of self-concept, social comparison, self-perception, and academic achievement with the additional identifiers of childhood and early adolescence used to narrow the search for more relevant material. The following search terms were used: *achievement, competence, self-concept, self-theory, social comparison,* and *social identity*.

Achievement, for the purpose of this review, is examined from historical and theoretical perspectives and in context with high-stakes testing as a means of exploring achievement accountability. Achievement as a measurable variable is reflected in the form of student grades and/or standardized test scores. Sternberg (2005) defines competence as “the acquisition and consolidation of a set of skills needed for the performance in one or more life domains” (p. 15). For the purpose of this review, achievement and competence may be used interchangeably. Shavelson and Bolus (1982) define *self-concept* as an individual’s self-perceptions formed over time, as a result of social interactions, experiences and the interpretations of these experiences combined with and heavily influenced by evaluations by significant others. Dweck and Molden (2005) define self-theories as “people’s beliefs about the fixedness or malleability of their

personal qualities, such as their intelligence” (p. 123). Social comparison theory is grounded in the notion that individuals seek accurate evaluations of their abilities and validation of their opinions and, when unable to obtain such feedback through objective means, will seek to get them through comparison with others who share similar qualities (Wheeler & Suls, 2005).

Theoretical Considerations

Self-concept and self-theory. Self-concept is defined as one’s self-perceptions formed through a variety of experiences and interactions with an individual’s social environments (Elliot & Dweck, 2005; Marsh & O’Mara, 2008; Marsh & Shavelson, 1985). Self-concept’s historical foundation began centuries ago with some of the great philosophers, while its contemporary origins can be traced back several decades. The focus on the self as a psychological unit of study began many centuries ago. Descartes, widely credited as one of the early pioneers of self-theories, published *Principles of Philosophy*, a 17th century work in which he discussed philosophical terms and concepts such as the mind, psyche, self, and soul. Descartes (1644) suggested that if one could doubt, then he existed, because to doubt is the central component of the intelligent thought process (Purkey, 1970).

Early origins of self-theory can be found in the works of Sigmund Freud, whose focus centered on the development of ego (Purkey, 1970). The turn of the 20th century saw a revolution of thought, with many psychologists vying for an increased focus on their respective points of view. Indeed, during this time period, there was a growing interest in the study of “self,” “consciousness,” and “insight” in the field of psychology (Purkey, 1970). James and Freud, whose self-theories emerged in the early 1900s,

illuminated the notion of self, providing it with a kind of prominence that had not yet been realized. In the early to mid-20th century, the behaviorists dominated the discourse, promulgating the notion that only observable behaviors could provide credible evidence of self and, hence, were the only measure worthy of scientific analysis. The most significant factor in the weakening of the self-movement was the lack of empirical studies that existed, as very little attention was focused on the research aspect of gathering of evidence through studies or investigations.

During the early 1900s there were many opposing schools of thought among the social psychologists of the day. The Freudian school of thought focused on the inner workings of the unconscious mind, while the behaviorists advanced their theory that only observable behavior could be relied upon as scientific evidence (Purkey, 1970). Since educators typically follow the prevailing theories purported by leading psychological associations, educators soon abandoned their emphasis on studying the various dimensions of *self* as well.

A rebirth of the focus on self-concept and academic achievement took place when Carl Rogers, in his writings and lectures between 1947 and 1969, catapulted the self-theory back into the forefront of the discourse, arguing that “the self is the central aspect of personality” (Purkey, 1970, p. 6). He proposed that the self is central to an individual’s behavior and ability to adjust. He went further in describing the self as “a social product developing out of interpersonal relationships and striving for consistency” (Purkey, 1970, p. 6). Rogers’ views became highly credited and widely known as “self-theory.” The self-theories have been linked by many researchers to studies on achievement motivation and self-perceived beliefs about competence. Self-theory

includes one's perceptions of his/her own intelligence, which are central to the formation of the "meaning system" ([how one processes and evaluates and assigns meaning through experiences and interactions] Dweck & Molden, 2005). Meaning systems contribute to the individual's sense of self, motivation, and beliefs about competence. Dweck and Molden (2005) further clarify their description of self-theories, adding the following:

people's beliefs about the fixedness or malleability of their personal qualities, such as their intelligence: Do people believe that their intelligence is a fixed trait "You have it or you don't" or a malleable quality that they can cultivate through learning and effort? (p. 123)

This example of self-theory, (also known as *entity theory*), suggests that intelligence is fixed and based on predisposed quantities (Dweck & Molden, 2005). In contrast to entity theory, incremental theory reflects the belief that intelligence can be developed and increased by virtue of one's own effort. Self-concept has been the central focus in the study of academic motivation and achievement for many leading researchers (Marsh et al., 1999; Marsh & O'Mara, 2008; Molloy et al., 2011). For many decades, researchers have studied competence-related beliefs and self-efficacy of youth and adolescents as factors that influence academic motivation and achievement. To gain a better understanding of the development of self-concept (with particular focus on academic self-concept) in childhood and adolescence and its relationship to academic achievement, this literature review explores the relationship between self-concept, achievement, and the socialization process of social comparison by examining empirical studies, theoretical research, and intervention models. The researcher of the present study conducted a review of the literature in this context to explore the socio-cognitive

developmental approach to understanding self-concept and its relationship to academic outcomes.

Social comparison theory. Social comparison theory posits that individuals, through social comparison, develop self-evaluations and behaviors consistent with how they view themselves in relation to others (Wheeler & Suls, 2005). Widely regarded as the pioneer of social comparison theory, Festinger (1954) advanced the philosophy that individuals pursue reliable and accurate appraisals of their opinions and abilities, and when that individual lacks any objective means of evaluation, he or she will resort to making comparative self-evaluations based on performance or some standard set by similar others. Self-evaluation had been regarded as the central motive associated with social comparison processes, however, during the 1970s and 1980s, researchers advanced the notion that self-enhancement as a means of protecting one's self-esteem is another reason individuals engage in social comparison (Goethals & Darley, 1977; Wills, 1981). Self-enhancement is markedly different from self-evaluation in that self-evaluative individuals seek affirmation while self-enhancers seek emotional or psychological satisfaction (Wheeler & Suls, 2005). A third motive for engaging in social comparison is improvement; although this factor is not addressed in the writings of Festinger (1954), researchers have adopted the implied notion that individuals use information from making comparisons to assess their own abilities (Gibbons & Buunk, 1999). Researchers tend to use the self-enhancement and self-evaluation models to conduct their research.

Current investigations support the notion that a variety of motivational factors are associated with social comparison processes, and the current conceptual framework describes social comparison as a process whereby individuals base self-evaluations of

their own qualities and characteristics to those of others (Dijkstra, Kuyper, van der Werf, Buunk, & van der Zee, 2008). The classroom, a microcosm of social interaction, has been widely regarded as the ideal environment for examinations of social comparison theory (Buunk, Dijkstra, Kuyper, van der Werf, & van der Zee, 2008; Rogers et al., 1978). Therefore, the literature in this review includes research on social comparison theory specific to the classroom and school environment.

Achievement goal theory. Recent trends toward high-stakes testing (HST) and accountability in United States education have prompted education psychologists and theorists to incorporate the push toward “higher standards” into the achievement goal discussion (Ryan & Brown, 2005). In contrast, these two achievement motivation theorists explain that recent motivational psychological theories posit that external pressure to enhance achievement levels can result in negative consequences, citing the individual’s need for self-determination. This review addresses achievement goal theory as it relates to internal versus external motivation in the context of social comparison processes. Social identity theory will be discussed in order to provide additional background information as it relates to external motivation and achievement, being that identity formation can have positive or detrimental effects on achievement-related behaviors (Abrams & Hogg, 1970).

Achievement and social identity. Abrams and Hogg (1990) define social identity theory as an individual’s awareness of his status in association with particular social groups and his/her attachment of some emotional value to that membership. Social identity theory first gained prominence in the 1970s with the work of Henri Tajfel and John Turner, who focused largely on group processes and how it informs self-conception

through categorization. Social identity theory holds that an individual's perception of him/herself is developed, in large part, through a series of interactions with other individuals and groups with whom the individual comes in contact with through his/her social environment. Social identity is defined as "the individual's knowledge that he/she belongs to certain social groups together with some emotional and value significance to him/her of the group membership" (Abrams & Hogg, 1990, p. 2). Festinger's (1954) social comparison theory suggests that individuals engage in comparison with similar others who are considered to possess the same or marginally superior abilities, and it is these comparisons that lead to self-evaluation and contribute to the formation of one's own identity. When examining the relationship between social environment and academic achievement, it is important to consider the notion, as postulated by Abrams and Hogg (2005), that the nature of peer relationships is likely to have motivational implications with respect to academic aspirations and goal-setting. It is also important to be aware that students may strive to achieve academically when they feel secure that the requisite support for engagement in such activities is in place within their social network.

Identity formation, as defined by Eccles et al. (1989), "has been conceptualized as the process by which individuals (1) develop a more accurate sense of their relative competencies, (2) come to understand what their values are, and (3) conceive self-esteem as grounded in these valued areas" (p. 229). According to the literature, it is through these encounters that the individual develops feelings and beliefs about academic competence and abilities.

Self-concept

Historical and theoretical literature. According to Dweck (1999), there are distinct differences in the extent to which individuals hold an entity theory of intelligence (the belief that intelligence is fixed) or an incremental theory (the belief that intelligence is a flexible quality that can be increased through effort), (Ahmavaara & Houston, 2007). In a study conducted by Blackwell et al. (2007), the researchers examined the relationship between self-theories of intelligence and academic achievement. The design was longitudinal, with researchers tracking students over the transitional stages between elementary to middle school. The participants were tracked for a 2-year period, beginning in seventh grade. The independent variables included motivation, beliefs about effort (i.e., entity vs. incremental), student attributions (explanations for challenges), and the ability to employ self-regulatory strategies. The dependent variable measurement was the effect of the independent variables on student math grades. In analyzing the study participants' meaning systems, the researchers found evidence that the incremental theory, with its supports for positive effort and goal orientation, resulted in increased use of strategies designed to help students achieve mastery. In turn, the implementation of these strategies served had a relationship to increases in academic achievement.

In another study, Blackwell et al. (2007) tested the hypothesis that students with lower academic achievement who hold an entity theory of intelligence would benefit from participation in an incremental theory intervention. According to the researchers, adolescents who endorse more of an incremental theory of malleable intelligence also endorse stronger learning goals, hold more positive beliefs about effort, and

make fewer ability-based, “helpless” attributions, with the result that they choose more positive, effort-based strategies in response to failure, boosting mathematics achievement over the junior high school transition. (Blackwell et al., 2007, p. 258)

The results indicated that low-performing students operating under an incremental theory of malleable intelligence did not demonstrate a decline in math scores, and even showed an increase in math grades over the term. The findings of this study and similar others supports further study of how motivation and competence can grow from an individual’s self-concept (Dweck & Molden, 2005). While it is reasonable to conclude that the results of these studies validate the hypothesis that an incremental view of intelligence bears a positive relationship to academic performance, these studies confirm the notion that the implementation of an intervention model aimed at fostering the development of academic self-concept and beliefs about student achievement can have significantly positive results. These studies lay the foundation for more research in the area of incremental theory of intelligence and its relationship to the development of academic self-concept and achievement.

Causality. Establishing a causal relationship between academic self-concept and academic achievement is conceivably one of the most perplexing questions among self-concept researchers. Researchers have examined the causal ordering of academic self-concept and academic achievement without much support by empirical research. In a reanalysis of the Byrne’s 1984 study (as cited in Marsh et al., 1999), Marsh et al. (1999) conducted a review of several earlier studies on this topic using the following criteria:

1. A statistical relationship must be established,

2. A clearly established time precedence must be established in longitudinal studies, and
3. A causal model must be tested using statistical techniques such as Statistical Error of the Mean (SEM).

The self-concept instrument used in her study was the Coopersmith Self-Concept measurement tool, along with its academic subscale. In the review of these studies, the central question behind the research was whether changes in academic self-concept have a causal relationship with changes in academic achievement. In the earlier study, Byrne and Shavelson (1986) found no significant relationship between previous academic achievement and subsequent self-concept and the result was the same in the inverse as well. In stark contrast to Byrne's findings, the researchers conducting the reanalysis concluded that the Coopersmith instrument could only be used to measure general self-concept and was not adequate in measuring domain-specific academic self-concept (Marsh et al., 1999). In spite of this problem, academic self-concept researchers considered Byrne's early investigation to be the pioneering study that set the foundation for additional research on the causal relationship between academic self-concept and academic achievement (Marsh et al., 1999).

Studies purporting to identify a causal relationship between variables associated with self-concept have found little support among social psychology researchers. As stated earlier, a single construct or stable definition for self-concept and its components does not exist; therefore, as Marsh et al. (1999) have suggested, researchers must make the critical distinction as to whether future investigations will focus on academic self-concept, self-concept of ability, perceived competence, or self-definition. While the

researcher for the present study is interested in the relationship between total self-concept and achievement, academic self-concept will receive particular emphasis.

Self-concept, culture and ethnicity. Ethnicity has received little attention in the study of self-concept, leaving some to question why ethnic and cultural differences are not given more consideration in investigations into the development of self-concept (Kenny, 2009). Dweck and Molden (2005) theorize that different self-theories evolve as a consequence of socialization practices that alter meaning systems, potentially impacting the formation of self-perception and belief systems. On the other hand, Ryan (2001) investigated contextual differences (i.e., ethnicity and gender) between peer groups and the development of students' motivational beliefs and attitudes toward achievement. The study used seventh grade students from an urban school district represented by various ethnic backgrounds (Whites – 68%, Hispanics – 19%, and Blacks – 10%). Despite the reported overall decline in achievement for all students from the end of fifth grade through the end of the first year of middle school, the study reported no significant relationship between peer influence and utility value toward school, as well as various other achievement outcomes. In addition, ethnicity was not considered a factor as the results found consistency in the outcome for all groups, regardless of race. Researchers have advanced a variety of opinions as to the relationship between culture, ethnicity and self-concept; therefore, it yields to reason that evaluations of self-concept from a multi-cultural perspective could serve to add more clarity to the argument.

In general, the science of social-psychological research has largely ignored ethnic minority research, (Sue, 1999). Segall, Lonner, and Berry (1998) emphasized the importance of recognizing ways in which culture and behavior interact. The authors posit

that “culture is the primary shaper and molder of everyone’s behavior” (Segall et al., 1998, p. 1107). There is evidence of the meager amount of social psychological empirical studies involving research on ethnic minorities. Iwamasa and Smith (1996) asserted that between 1970 and 1993, U. S. minority groups were represented in a mere 1.3% of all articles appearing in three major behavioral psychology journals, which is very shocking, considering the voluminous amount of literature concerned with performance assessment, such as those focusing on the Achievement Gap. The scarcity of research on ethnic minorities in the U.S. in behavioral psychology is prime reason for the researcher of the present study to present an alternative view of the self-concept and achievement relationship for minority students in urban school districts.

In addition, research has found that children from low SES backgrounds tend to have higher self-concept than do students raised and educated in higher SES environments (Cicirelli, 1976). To test this hypothesis, the researcher of the present study will consider certain demographic characteristics, such as, *ethnicity*, (*SES*), *parent education levels*, and *teacher education experience levels* for the purpose of identifying any between-school similarities and/or differences.

Domain-specific self-concept. Some researchers have taken a different approach towards exploring the relationship between academic self-concept and academic achievement. The belief that students’ self-perception of academic competence varies according to domain, over time, is the premise upon which Wigfield, Eccles, MacIver, Reuman, and Midgley (1991) based their study of domain-specific self-perceptions. The researchers included variables from a variety of theoretical constructs with self-theory being the general overarching theme. The researchers measured student self-esteem and

self-concept, as well as the students' attraction to specific school subjects and activities. This study included the students' competency levels as a factor, noting that beliefs about academic competence vary at different levels of ability. As Wigfield and Wagner (2005) suggest, "Adolescents with strong beliefs in their competence, and positive achievement values and goals, thus should perform more capably" (p. 222).

Several recent evaluations of student self-perception during school transitions suggest that students undergo various changes in their social contexts (i.e., puberty, relationships with peers and family, and concerns about social identity), and their response to these types of changes, or the internalization of these experiences, determines whether these students experience positive or negative outcomes (Wigfield & Wagner, 2005). The authors present evidence that as children enter adolescence, their self-perceptions become increasingly negative. Researchers predicted that self-esteem would decline significantly during the initial transition to middle school, but gradually recover over time. Another area of interest to self-concept researchers relates to developmental differences associated with responses to the social environment. As espoused by Asplough (2001) reported consistent achievement loss as a result of school-to-school transitions. This perspective provides support for the theoretical opinion that developmental differences in self-concept are worthy of further investigation (Harter, 1982; Molloy et al., 2011; Wigfield et al., 1991).

Wigfield et al.'s (1991) study provided support for further inquiry into developmental differences associated with self-concept. The participants were sixth grade elementary students nearing the transition to middle school. The same students participated in the study through the end of the seventh grade. The dependent variables

included: self-esteem, self-concept of ability, and liking (preferences or value assigned to performance of certain tasks). The findings suggested that students' self-concepts as well as likings changed over time. A correlation was found between changes in self-concept and changes in the relative social environment. Longitudinal analysis revealed that declines in participants' self-concept correlated with changes in the environment, with the greatest decline in self-concept taking place during the initial transition period. As noted in an earlier study by Marsh et al. (1999), perceptions of self-competence were much higher in sixth grade as opposed to seventh grade, where declines were quite significant. The investigators likened this result to the change in environment where upper elementary students enjoy the social status of being school leaders, whereas, when they enter middle school, they lose this confidence as they enter an environment full of unknowns. The question is whether there any correlation exists between higher self-concept and academic achievement. The review of the studies that follow may shed more light on the relationship between self-concept and achievement-related behaviors.

Self-concept and aspirations. Ahmaavara and Houston (2007) examined the effect of selective schooling or school reputation on self-concept and academic aspirations in adolescents. The participants included 856 students from two selective (high-achieving) grammar schools ($N = 458$), and two non-selective secondary schools ($N = 398$). The researchers' goal was to develop a model for achievement aspiration that would serve to mediate the effects of school reputation on academic self-concept. The researchers examined the participants' implicit theories of intelligence and the impact of self-esteem on student achievement. The study employed a predictive model that considered gender, age, school type, and beliefs about self-theory of intelligence as the

independent variables. Self-concept was used as a mediating factor, as well as the type of feedback a child receives, and whether that feedback is grounded in an entity (fixed) or incremental (expandable) theory of intelligence. The instrument used measured responses to questions based on an entity view of intelligence, confidence in one's intelligence, perceived academic performance, self-esteem, future aspirations, and identification with one's school. The researchers for this study found a direct, statistically significant relationship between school type and aspiration.

School type and self-concept. Ahmavaara and Houston (2007) found a correlation between self-theory of intelligence and academic aspiration, both mediated by school type. The study found that students' intelligence beliefs were related to academic aspirations, both of which were influenced by one's social identity formed in association with school type (e.g., high-performing vs. low-performing). In essence, the researchers found that students enrolled in schools with high-achievement reputations possessed higher self-concept than students enrolled in low-performing schools. Ahmavaara and Houston's study employed a sampling method that included students across grade levels. The researchers found similarities in beliefs about self-competence and goal aspirations that were consistent between both groups. Given the results of this study, if school type has a direct statistical correlation to academic aspiration in children and adolescents, then it is important to consider other factors. As postulated by Ahmavaara and Houston (2007), "It remains important to understand the nature of aspirations within each type of school setting" (p.627). The researchers found support for Dweck's theory of intelligence, which posits that those who hold an incremental or malleable theory of intelligence have higher levels of motivation and aspirations (Ahmavaara & Houston,

2007). Marsh and Parker (1984) conducted a similar study, but reported conflicting results. They studied academic self-concept in elementary students residing in the same geographic area from diverse socio-economic backgrounds and with varied IQ levels. The study found a negative association between school performance level and academic self-concept, meaning that students enrolled in high-performing schools tended to have a lower academic self-concept. The reverse was found to be true with students enrolled in low-performing schools. If this logic prevails, then it should be natural to assume that schools in districts plagued by low-performance must be overflowing with students who have very high academic self-concept. Since self-concept is multi-dimensional, researchers must consider multiple frames of reference or standards of comparison (e.g., individual vs. group) when examining self-concept in the context of the educational environment (Marsh & Hau, 2003).

Peer relationships. A study conducted by Buhs et al. (2006) examined peer group acceptance and rejection and their potential link to childhood development and adjustment in upper elementary-aged students. The study examined three variables from an empirical and theoretical perspective: socially responsible behavior, the quality of peer relationships, and self-regulatory behavior. The participants in this study included kindergarten students who were identified in the fall of the preceding school year and tracked through the end of the year. The study revealed that chronic maltreatment was not necessarily predictive of school avoidance or disengagement from classroom activities. A limitation of the study was the possibility that students may also demonstrate avoidance of situations that result in peer scrutiny (Buhs et al., 2006). Another limitation of this methodology is that while the study examined two methods by

which students disengage, it considered only one aspect of student engagement, classroom participation, as a correlate between maltreatment by peers and student achievement. This finding points to a strong connection between peer exclusion and classroom participation.

Boivin and Bégin (1989) conducted a similar study to examine the correlation between difficulty in peer relationships and self-perceptions. The researchers suggested that children who experience problematic relationships with peers exhibit low self-concept and negative perceptions about self-competence and self-efficacy. The goal of the study was to determine whether it is possible to identify particular subgroups of rejected children. The researchers hypothesized that two groups would emerge: one with lowered self-concept and another exhibiting high self-concept. The subjects included 222 children (102 girls and 120 boys), ages 9 to 11. The independent variables, self-concept and peer status, were measured using Harter's Perceived Competence Scale, as well as teacher evaluations to determine the dependent variable, groups of rejected children, using a one-way analysis of variance. The study found a correlation between peer social acceptance/status and self-perception. Interestingly, not all rejected children exhibited negative self-perceptions, although some showed low self-perception and low self-esteem. While this study did not include academic achievement as a variable, its findings are nevertheless intriguing. The evidence suggests that there is considerable disagreement among researchers and theorists interested in the relationship between peer acceptance and academic self-concept. In some cases, unpopular children self-report high perceptions of social competence, and popular children often self-report low perceived competence (Boivin & Bégin, 1989). These reported findings raise the

speculation that peer acceptance or rejection may not be the most reliable predictor of academic self-concept.

Social Comparison

Historical and theoretical literature. More than 50 years ago, Festinger (1954) was the first to use the term *social comparison* and conceptualize the theory (Suls & Wheeler, 2000). The first published work on social comparison, the 1966 *Journal of Experimental Social Psychology* sparked more interest in the subject and prompted a flurry of research (Suls & Wheeler, 2000). While the aforementioned literature have been widely regarded as the contemporary guiding forces in the study of social comparison, Suls and Wheeler (2000) trace the evolution of the concept back to the days of Aristotle who wrote in his *Nichomachean Ethics* of his concern with comparison between people. In the 1980s, Tom Wills (1981) wrote another book that gave rise to the theory of *downward comparison*. This publication advanced the notion that individuals who possess low self-esteem are more inclined to compare downward (with someone of lesser ability or possessing lesser qualities) and such individuals have a greater need for self-enhancement (Suls & Wheeler, 2000).

Several investigational models for the examination of social comparison processes evolved over the next few decades. The self-evaluation maintenance (SEM) model has been the leading social comparison model for the measurement of human behavior and emotion (Tesser, 2003). The basic assumption of the SEM model is that individuals are motivated to maintain positive emotions about themselves. Under the SEM model, researchers test the theory of relevance, which suggests that when individuals perform a task that has high relevance, or that they deem representative of

their attributes or abilities, the individual is more likely to engage in social comparison with someone close to him/her, rather than with a stranger. A key benefit of the SEM model is that it provides opportunities for individuals to find their area of strength relative to others, thereby satisfying the need to maintain positive feelings about the self. Other contemporary versions of the SEM model will be explored in a subsequent section of this review.

Socio-cognitive theorists specify that any inquiry into the formation of self-concept must not ignore the immediate social environment as a frame of reference (Marsh et al., 2008; Trautwein et al., 2009). Social comparison theorists have postulated that the three primary motives for engaging in social comparison are *evaluation*, *improvement*, and *enhancement* (Gibbons & Buunk, 1999).

Social comparison and self-evaluation. In a 1999 study conducted by Blanton, Buunk, Gibbons, and Kuyper, the variable *comparative evaluation* was used to measure the degree to which individuals evaluate their own ability relative to others. The goal of the study tested the hypothesis that improved performance is linked to an individual's tendency to compare themselves to higher-achieving peers, as well as the proclivity to view themselves as more competent or better than others. One major finding in this study was that social comparison was a reliable predictor of academic achievement. Additionally, the performance level of the selected target for comparison, and comparative evaluation (how one sees him/herself in relation to others) predicted achievement outcomes in a cross-curriculum manner, with consistency (Blanton et al., 1999). While the study's findings supported the original hypothesis, a substantial weakness was that the findings were based on a limited amount of comparison data.

Student scores were based on responses to questions regarding a single comparison target.

There are various motivational factors involved in social comparison processes. Reports from early studies suggest that younger children compare themselves to others for reasons having to do with validation or concern for correct answers (Frey & Ruble, 1985), while older students (fourth through eighth graders) use social comparison for self-evaluative purposes (Boggiano & Ruble, 1979; Frey & Ruble, 1985). Abundant evidence has shown that age is a determining factor in the degree to which children engage in social comparison (Feld, Ruhland, & Gold, 1979; Frey & Ruble, 1985; Pomerantz, Ruble, Frey, & Greulich, 1995).

In a study examining social comparison, task motivation, and the development of self-evaluative standards in children, France-Kaatrude and Smith (1985) sought to shed light on children's comparison preferences to determine children have a tendency to compare with similar others or with superior- or inferior-performing others. The study used first and fourth grade students from ethnically mixed urban public schools, most of which had lower middle-class backgrounds. The method was based on an experimental trial that measured children's interest in looking at other student's scores on the same test being administered to them. The study showed that the children expressed greater interest in comparing their performance to peers of similar ability than those with either superior or inferior performance characteristics. In addition, this study indicated that the younger children were no less interested in engaging in social comparison, albeit for different reasons. The stated weakness in the study of social comparison motivation in children is that the link between social comparisons, for self-evaluative purposes, is a

recent development in the social comparison literature (Ruble, Boggiano, Feldman, & Loebel, 1980). Therefore, more research is needed to gain a better understanding of the extent to which children use social comparison for self-evaluative purposes. This literature review suggests that further investigations into self-evaluation as a motive for social comparison would add to the present discourse and provide more insight about the extent to which upper-elementary students use social comparison to evaluate performance and whether this practice is positively related to achievement.

Target selection: up, down, or lateral. Ever since Festinger (1954) first hypothesized that individuals prefer to compare themselves to others with similar characteristics, researchers have scrutinized the direction of comparison. Festinger's similarity hypothesis has been tested in a considerable number of studies both cross-culturally and on an international scale. Surprisingly, only a scant number of studies have conducted direct inquiries into why students chose specific comparison targets; therefore, no consensus exists as to whether motives for social comparison stem from a need to self-evaluate, self-enhance, boost achievement, or defend one's ego (Buunk et al., 2008).

Consequences of social comparison. The Small Fish Big Pond Effect (SFBPE) is a modern take on social comparison that suggests that individuals acquire a negative self-concept when they engage in social comparison with high-achieving peers (Marsh, Kong & Hau, 2000; Suls & Wheeler, 2000). Wheeler and Suls (2005) proposed that students of equal ability attending schools with different school-average performance levels often have significant differences in academic self-concept. The premise is that since average school achievement levels differ, individual frames of reference differ as well, resulting in students forming academic self-concepts relative to their school

environment . In contrast, Blanton et al. (1999) found that students performed better academically when their comparison targets were high-achieving. Additionally, these researchers found that when students saw themselves as more capable than other students, their level of performance was consistent with their perceived competence. These contradictory findings suggest that more research is warranted in the area of the assimilative and contrastive effects of social comparison; to provide more clarity in understanding how individuals self-evaluate based on perceived competence of others

Perceived competence. Several studies have explored social comparison theory by examining the relationship between perceived competence (based on specific others as targets) and self-evaluation. Guay et al. (1999) examined links between the development of self-evaluation and friends' academic performance with the main focus being the extent to which social comparison processes illuminate the relationship between perceived competence and academic achievement as a function of peer relationships. The instruments used in the study included the Self-Perception Profile for Children (Harter, 1998), a single-item assessment tool that measures the relevance of academic achievement to students' definition of self, and a questionnaire administered to teachers that rated student achievement levels in reading, writing, and mathematics. The participants were second, third, and fourth grade French-Canadian students from a variety of socioeconomic backgrounds. The researchers found that 87% of the participants believed that academic achievement was highly relevant to their self-definition. The researchers tested the hypothesis that social comparison processes would emerge in such situations. The result of two regression analyses testing for social comparison processes produced several findings: (a) achievement was positively related to perceived

competence; (b) the relationship between academic achievement and perceived competence was minimized when social comparison involved high-achieving best friends, due to inferiority threat; and (c) students with low-performing friends were better able to calibrate self-perceptions of ability due to the lack of threat by a higher performing peer. There are many strengths to this study, one being that if achievement is positively related to perceived competence, and if it is known that social comparison with high-achieving friends results in negative self-concept, such data can be used to address ability grouping practices in many classrooms.

Achievement

Historical and theoretical literature. Student achievement (also referred to as competence or proficiency) has become a high priority issue for educational agencies and governments concerned about their economic health and global competitiveness (Ryan & Brown, 2005). In the United States, state and federal education officials have embraced high-stakes testing (HST) as a means of evaluating student performance. HST has its origins as early as the 19th century; philosophers Jeremy Bentham (1748-1832) and James Mill (1733-1836) promoted the use of rewards and punishments as a means of fostering good study habits. The first known government to adopt an official policy on the implementation of HST was the English Parliament, which enacted a revised code in the mid-17th century. This code invoked a results-driven incentive that tied student performance to additional funding opportunities. In spite of its eventual failure, the basic tenets of the English model found its way into American educational policy more than a century later (Ryan & Brown, 2005).

In the United States, the National Committee on Excellence in Education published a controversial document titled *A Nation at Risk* in 1983. In an open letter to the American people and government officials, the authors asserted that the United States would be unable to compete globally unless drastic measures were taken to improve the quality of education and achievement of American students (Ryan & Brown, 2005). The report outlined various areas of concern, such as poor academic standing in comparison to other countries, poor performance on international tests, declines in Scholastic Aptitude Test (SAT) scores, and a persistent decline in high school science achievement on national tests, among a host of other achievement indicators (Tirozzi & Uro, 1997). The first attempt by the U.S. government to address these problems began with the reauthorization of the Elementary and Secondary Education Act (ESEA) as the Improving America's Schools Act (IASA) of 1994. Tirozzi and Uro were critical of the lack of coherence of the program, in spite of its good intentions; however, they did cite the positive support that the Act provided to poor and underprivileged students under Title I and credited the Act with the largest allocation of federal dollars directed toward helping poor, underserved students. The No Child Left Behind Act (NCLB) of 2001 is the latest national policy aimed at raising student achievement.

With the support of both political parties, President George W. Bush was able to pass the No Child Left Behind Act of 2001, a piece of legislation mandating that all students must meet a national standard of achievement and that underperforming minority students and those in failing schools receive additional resources and the necessary support to meet required objectives (Ryan & Brown, 2005). In a trade article that examines the implications of measuring academic proficiency under NCLB, Kim and

Sunderman (2005) explain that the NCLB legislation contains a mandate that all students demonstrate proficiency in reading and mathematics by the 2013-2014 school year. The authors further describe how Congress and the former president imposed a requirement that all schools measure performance and academic achievement through the use of a formula that records adequate yearly progress (AYP). Student performance is assessed using annual measurable objectives (AMO), which dictates that a minimum number of students must meet or exceed the level of “proficient” on standardized tests in reading and mathematics. Kim and Sunderman (2005) are critical of the one-size-fits-all approach to the NCLB legislation that requires all schools to apply the same mechanism for evaluating student performance to all student groups, regardless of inherent differences among demographic subgroups. The authors argue that the NCLB system of rewarding high-performing schools is equivalent to rewarding schools for having enrolled students who enter the school system at a higher level of readiness due to their advantaged socioeconomic background. The provisions of this law were designed to address the widening achievement gap between minority and non-minority students, and between the disadvantaged and their non-disadvantaged peers (Kim & Sunderman, 2005).

Achievement goal theories. In his description of the behaviors associated with achievement situations, Elliot (2005) stated that “the achievement-goal construct was grounded in a distinction between mastery and performance forms of competence-related motivation” (p. 52). Mastery goal theory, also referred to as learning goal theory, and has to do with enhancing knowledge. Mastery or learning goals lead to a positive response to failure because such feedback could be interpreted as constructive. On the other hand, performance goal theory, which has to do with one’s striving to demonstrate one’s

competence, can lead to helplessness, as the individual is likely to attribute failure to a lack of ability (Dweck & Leggett, 1988). Whether an individual is motivated by mastery or performance goals, this researcher found no mention in the achievement goal literature of the extent to which socialization processes may interact with a student's achievement goals to produce achievement behaviors; therefore, the following sections seek to highlight the relationship between external motivational processes and how these interactions may combine to produce achievement motivation, as well as attitudes and beliefs about competency.

Achievement and the social environment. Beginning with the 1970s, the study of motivation and achievement led to further examination of social-cognitive processes, as opposed to socio-environmental factors (Dweck, 1986). Childhood sociology researchers widely accept the notion that childhood social self-perceptions play a significant role in the development of self-concept and beliefs about academic competence, whether positive or negative (Elliot & Dweck, 2005). The social environment and one's perception of his/her social standing can shape subjective beliefs about oneself and the world in general, which manifest in certain behaviors (Ryan, 2001). According to Ryan,

Achievement beliefs and behaviors that are discouraged or received negatively by the peer group are less likely to be displayed again by an individual. Conversely, achievement beliefs and behaviors that are encouraged or positively received by the peer group are more likely to surface again in the presence of one's peers. (p. 1136)

Self-categorization and achievement. A number of researchers have linked social identity to the theory of social categorization. For example, as stated by Abrams and Hogg (1990), “Self-categorization theory emerged out of the social identity approach only in 1985. It has attracted a growing corpus of empirical support, such as in the areas of group polarization and group cohesiveness” (p. 26). Their research holds that individuals, through their membership in certain social groups, self-categorize and develop certain behaviors reflective of the collective group. Self-categorization is the tendency to accentuate similarities of certain attributes one shares in common with a group (Abrams & Hogg, 1990). To the extent that individuals develop identities that are reflective of the values of the group with which they choose to identify, this concept could have important implications as to the whether or not students adopt certain attitudes, beliefs, and achievement behaviors. This concept may have relevance to perceived competence on the level of class and school-average achievement.

Achievement, age, and gender. A study conducted by Jacobs et al. (2002) examined changes children’s self-perceptions over time through adolescence, their choices of activities, and the task value they assigned to those activities. The researchers sought to document and analyze children’s self-beliefs, subjective task value, and trends in academic performance over time in several academic domains. Jacobs et al. used Hierarchical Linear Modeling (HLM) to track changes in the self-beliefs of students in grades 1-12 over a period of 3 years. Ninety-five percent of the children were European-American. The sample consisted of 761 students: 53% girls and 47% boys. Each spring, the students completed questionnaires that addressed the following independent variables: self-competence beliefs, and subjective task values in language arts, math, and

sports. The dependent variable was the students' performance indicators. The study found that competence beliefs and subjective task values were highest in first grade in all three academic domains. The results showed a significant decline in competence beliefs across the grade levels and as children aged. Gender differences were more prevalent in the early grades, but tended to decline over the entire period (Jacobs et al., 2002). Researchers have generated sufficient support regarding these outcomes to imply that changes in self-concept are related to developmental differences and changes in the nature and changing role of peer relationships in the shaping of attitudes and beliefs (Marsh et al., 2008; Molloy et al., 2011). These findings are important to the study of the relationship between achievement and self-concept as it has been hypothesized that competency beliefs have a distinct relationship to academic motivation and achievement related behaviors

Achievement and social identity. In a review of the literature on social identity and achievement, researchers Graham and Hudley (2005) propose that researchers are becoming increasingly interested in ethnic identity as an educational risk factor. Ogbu's (2003) cultural ecological theory posits that minority groups develop perceptions about their social identity through the lens of society-at-large, based on how the dominant culture has treated the minority group. According to Ogbu's theory, involuntary ethnic minorities (minorities whose ancestors' origin in this country came through force or colonization) often develop what he refers to as *oppositional identity*, whereby they adopt patterns of behavior that stand in stark contrast to those of the dominant culture, and often develop aversions to mainstream beliefs and values, including those of striving for achievement (Graham & Hudley, 2005). Students who adopt the oppositional identity

perspective develop an aversion to academic striving and other behaviors associated with the dominant culture as a means of rejecting the dominant culture's system of values, or to fit in with their respective peer networks. It is important to note, however, that other studies have found that African-American students did not differ from European-American students in their beliefs about competency, did not feel that academic prowess would alienate them from their peer group, and did not believe academic achievement would pose a threat to their racial identity (Graham & Hudley, 2005).

Achievement and stereotype threat. Research has shown that “incremental theory can protect students from the debilitating effects of negative stereotypes on performance” (Dweck & Molden, 2005, p. 129). Stereotype threat exists when members of a group are perceived to lack competence by members of the larger society or dominant group. As a result, members of the stereotyped group exhibit performance anxiety and other related pressures (Dweck & Molden, 2005). Since 1995, several researchers concerned with underperformance by minority students (i.e., African-American, Hispanic students) and the achievement gap have conducted research and studies examining the relationship between stereotype threat and academic achievement. Stereotype threat and its constructs appear to have vast implications with respect to student academic performance. In a recent study, Good, Aronson, and Inzlicht (2003) identified two factors that they contend contribute to stereotype threat: *evaluative scrutiny*, or being judged by others, and *group composition*. The researchers emphasize that these factors must be addressed in order to mitigate their effect on academic achievement of minority students. The investigators sought to develop an intervention program designed for minority students (Hispanic, African-American, low

socioeconomic status, and female) transitioning from elementary to middle school, which many researchers assert is one of the most vulnerable stages in the development of self-concept. The researchers' goal was to assess intervention models designed to support minority students in overcoming the aforementioned two factors that are believed to contribute to the existence of stereotype threat. A field experiment was conducted using an intervention that taught participants about incremental theory and the malleable qualities of intelligence. The results of the study revealed an increase in achievement for all groups, especially those from low socioeconomic status backgrounds who are more likely to be vulnerable to stereotype threat, females, and minority students. The researchers credited the intervention with changing the mindset of students who had previously attributed academic difficulty to what they perceived as limited intelligence (entity theory). Moreover, Good et al. (2003) found that educating students about incremental theory increased beliefs about intelligence, specifically with respect to what students attribute as causes for their academic failures.

Summary

This literature review presented historical, theoretical, and empirical literature on self-concept and self-theory, social comparison theory, achievement goal theory, and achievement in context with social identity theory. This review sought to provide a multi-dimensional view of how these theoretical constructs can add clarity to the self-concept/achievement relationship in the context of social comparison processes by conceptualizing the key concepts central to each of the variables, self-concept, social comparison, and achievement. In summary, research has emphasized the importance of exploring self-concept from a multi-dimensional aspect with particular focus on academic

achievement and desired achievement outcomes (Marsh & Hau, 2003). This review extrapolated a belief that the self-concept/achievement relationship has motivational significance (Marsh et al., 1999). Additionally, the literature described achievement goal theories as they relate to current trends in assessing achievement and achievement motivation. Finally, the author of the present study chose to examine the relationship between social identity and achievement as a means of demonstrating how identity formation may interact with the achievement goal construct.

Self-theory and self-concept. A wide body of research has focused on the development of academic self-concept in childhood and adolescence as it relates to social interactions and constant feedback, evidenced through standardized test scores, teacher evaluations, and student grades. Peer evaluation and academic reputations may not provide an accurate measure of academic competence or achievement; however, these variables may have strong influence in the development of academic and social self-concept (Gest et al., 2005). As stated earlier, “Adolescents with strong beliefs in their competence, and positive achievement values and goals, thus should perform more capably” (Wigfield & Wagner, 2005, p.222). This perspective provides insight as to how self-perceptions influence academic motivation and beliefs about academic competence.

The literature clearly defined the relationship between self-theories of intelligence and self-concept. Individuals who subscribe to an incremental theory of intelligence (belief that intelligence can be increased through effort) may demonstrate achievement-related and self-regulatory behavior that results in increased competency or achievement. Those inclined toward an entity theory of intelligence (the belief that intelligence is a fixed commodity) may engage in avoidance behavior when faced with failure. This

seems to correlate with achievement goal theory's performance-avoidance construct (which will be discussed in a subsequent section). To mitigate such negative effects, the researcher of the present study concurs with the proposal of Blackwell et al. (2007) that self-enhancement interventions make it possible to increase achievement levels of low-performing students who possess an entity theory of intelligence. Additionally, Blackwell et al. (2007) provided ample evidence that it is possible to increase academic self-concept by teaching and modeling the principle that it is possible to expand one's intelligence.

School type appears to have a distinct relationship with self-concept, as put forth by Ahmavaara and Houston (2007). Marsh (1984) proposed that self-concept is highly dependent on frames of reference. The frame of reference model asserts that academic self-concept is largely dependent on perceived academic ability based on past performance and perceptions of peer ability levels within the same classroom environment (Marsh, 1984). Taking into consideration the challenges educators face in their efforts to identify what motivates students toward achievement behaviors, researchers must not ignore the role of perceived competency at both the individual and group level. The concepts and hypotheses reported in the social comparison literature provided more transparency with regard to the childhood socio-cognitive processes and how perceived competence and peer achievement may relate to academic self-concept.

Social comparison. The research on social comparison has shown that as children age, the inclination to compare themselves to others for self-evaluative purposes increases (Marsh, 1990; Molloy et al., 2011). On average, student grades showed a marked decline beginning with the end of elementary school and continuing through the

end of seventh grade with peer associations becoming more influential on several academic outcomes (Ryan, 2001). When within-classroom academic ranking was considered, researchers found a stronger association between reading and math achievement and self-concept, and classroom ranking (high-medium-low ability) showed strong correlations to self-concept (Trautwein et al., 2009). France-Kaatrude and Smith (1985) reported that elementary students prefer to compare themselves to others with similar characteristics and that younger students were no less prone to making comparisons. The older (fourth grade) students tended to become more critical of their own performance when making comparisons with similar others. This result has implications for educators and education psychology theorists interested in ability grouping in classrooms. Extended investigations into comparison target selection of students in upper-elementary grades could have positive implications with respect to how schools and classrooms are structured.

Achievement. Student achievement has been the focus of much national attention in the United States ever since the 1983 publication of *A Nation at Risk*, which cited many failures in the American educational system (Ryan & Brown, 2005). As indicated previously, school reform measures and initiatives such as NCLB have resulted in an intense focus on HST. The literature on student achievement lacks consistency regarding what constitutes achievement, as well as how the external environment may influence or shape achievement-related behaviors and outcomes. The review of achievement-related literature included research and studies that examined the relationship between various socio-cognitive developmental issues that may influence achievement, such as achievement-goal theory, perceived competence, age and gender, social identity,

oppositional identity, and stereotype threat. In summary, this review illustrates the complexity involved in exploring potential links between the external contingencies of the social environment and academic achievement

According to achievement goal theory, mastery goals and performance-avoidance goal orientation may bear some relation to an individual's proclivity to engage in either upward, downward, or lateral social comparison. If a student possesses mastery-goal leanings (desire to achieve knowledge and learning), upward comparison may provide the necessary challenge. If an individual's achievement motivation relies on performance goal theory (desire to demonstrate competency) the tendency may be to compare either laterally (to others of equal ability or qualities) or downward (to inferior others). The contradictory findings with respect to perceived competency require further investigation. Gibbons and Buunk (1999) found that achievement was positively related to perceived competence. The relationship between academic achievement and perceived competence was minimized when social comparison involved high-achieving best friends, due to inferiority threat, and students with low-performing friends were able to accurately assess their abilities based on peer performance. Other researchers report a negative association between social comparison with high-achieving friends and achievement (France-Kaatrude & Smith, 1985), signaling a need for further investigation.

Social identity theory, oppositional identity theory, and stereotype threat were reviewed to assess the degree to which these phenomena may provide additional contextual affordance in the analysis of achievement. With an ever increasing culturally integrated society, today's schools have become more culturally and ethnically diverse. Social identity theory, oppositional theory and stereotype threat each address the

possibility that group associations, historical, cultural and ethnic perspectives, and negative stereotypes can have a debilitating effect on academic achievement, and thus, contribute to the development of self-concept. The researcher of the present study believes that any investigation of achievement outcomes in a culturally and ethnically diverse school setting should not ignore social identity theory and its related constructs. For the proposed study, these theories and conceptual frameworks are presented to provide a basis for discussion with respect to student motivation and achievement-related behaviors. It should be noted that any one of these constructs could be the focus of an entire study.

This review has provided the researcher of the present study with sufficient evidence to suggest a significant relationship between the variables of self-concept, peer influence as a by-product of social comparison processes, and academic achievement. However, many inconsistent findings suggest an opportunity to explore comparison target choice (upward, downward, or lateral), as well as the relationship between perceived competence and achievement.

Chapter Three: Methodology

Overview

This chapter provides a detailed account of the research design, methodology, human subject considerations, instrumentation, and procedures to be used in the conduct of this study. The methodology will include a thorough description of the sample, the instruments, the method to be used in the administration of the instruments, and step-by-step procedures to be followed in the implementation of the study. A complete description of the instruments, along with reports of their reliability and validity, is provided. Next, a discussion of the process for data analysis will include a description of how the researcher will analyze the quantitative data, and the method for analyzing the relationship between multiple variables. This chapter will conclude with a summary of all the pertinent details. To help guide the scope and focus of the study, this chapter begins with a restatement of the purpose and research questions.

Purpose of the Study

There are two dimensions associated with the purpose of this study: (a) to explore average-classroom, and average-school achievement (dependent variables), and (b) to identify correlations, if any, to self-concept and social comparison orientation (independent variables) in fifth grade students in a culturally diverse school setting. In a meta-analysis of educational research, Marsh et al. (1999) found that academic self-concept was a reliable predictor of future academic achievement. Further, Marsh and Hau (2003) presented evidence suggesting that students develop academic self-concept through social comparison processes. Consistent with these studies, self-concept and social comparison orientation will be examined as in relation to academic achievement.

Consistent with earlier findings, the researcher for the present study expects that the relationship between academic achievement and self-concept will be most evident when examined in the context of the classroom setting (Rogers et al., 1978).

Research Questions

The following questions will form the basis for this study:

1. To what extent, if at all, is there a statistically significant relationship between self-concept and academic achievement in fifth grade students from four same-district elementary schools?
 - To what extent, if at all, are there any between-school differences in the relationship between self-concept and academic achievement?
 - To what extent, if at all, are there any within-school differences in the relationship between self-concept and academic achievement?
2. To what extent, if at all, is there a statistically significant relationship between comparison orientation and self-concept?
3. To what extent, if at all, is there a statistically significant relationship between comparison orientation and academic achievement?

The following table outlines the methods for performing statistical calculations:

Table 1

Statistical Methods

Questions Addressed	Independent Variable	Independent Variable Type	Dependent Variable	Dependent Variable Type	Inferential Method
#1	Student CST Proficient or Above	Attribute	Student Self-Concept (SC)	Numeric	ANOVA

(continued)

Questions Addressed	Independent Variable	Independent Variable Type	Dependent Variable	Dependent Variable Type	Inferential Method
#1a	API (School)	Numeric	School Mean Self-Concept (SC)	Numeric	Regression Analysis
#1b.	Mean CST Scale Scores (Classroom & Subgroup)	Numeric	Self-Concept (Classroom and Subgroup Means)	Numeric	Regression Analysis
#2	Student Comparison Orientation	Attribute	Student Self-Concept (SC)	Numeric	ANOVA
#3	Student CST Proficient or Above	Attribute	Student Comparison Orientation	Attribute	Chi-Square

Research Design and Methodology

The researcher of the present study will use a descriptive, quantitative research strategy, along with a correlational design, in conducting this study. The decision to use a quantitative approach was made due to the non-experimental nature of the study, as well as the need to examine relationships between many variables. The data collection process will use a cross-sectional, non-experimental design in the form of two separate surveys (Piers-Harris 2, and the Iowa-Netherlands Comparison Orientation Measure [INCOM]) to collect phenomenological data relating to individual beliefs and attitudes about competence, abilities, and opinions, as well as comparison orientation. Creswell (2009) supported the use of a cross-sectional survey design method, promoting the advantage of expediency, as well as the ability to make inferences and generalizations relative to a larger population based on a much smaller sample. The following sections of this chapter will describe the methodology to be employed in the testing of this model across two populations of fifth grade students.

Subjects

The participants in this study will consist of fifth grade students, a significant number of whom belong to ethnic minorities, enrolled in a large, urban school district. The subjects shall include a significant number of students who are characterized as low-performing, as well as a significant number who are considered high-performing. According to the CDE Technical Q&A (2011), the NCLB Act of 2001 established the requirement that each state adopt accountability measures that establish student achievement levels. The CDE adopted five levels: far-below basic, below-basic, basic, proficient and advanced in English-language arts, and math. The CDE defines a proficient student as one who performs at the proficient or advanced level on the California Standards Test (CST). For the purpose of the present study, low-performing students are those whose scale scores are characterized as non-proficient (basic, below-basic, and far-below-basic).

Target population. The population (N) is defined as all students returning a signed Parental Informed Consent form. Teachers will compile a *Participant Checklist* (see Appendix A) of students who return the consent form indicating their consent status and the principal researcher shall compile a master list and develop a database file.

Sampling. The researcher shall implement a convenience sampling approach to determine this study's final group of participants. The sample will consist of students returning a signed Parental Informed Consent form providing consent to participate in the study, minus those students who meet the exclusion criteria. Teachers will compile a list of students who return the consent form with permission to participate and PR shall compile a master list. The PR shall assign a random number to each participant, using the

Excel Random Generator function, and create a master database file. The PR shall compile a master list of the students included in the sample for each classroom and provide the list to each classroom teacher so that teachers are able to prepare quiet activities for those students who have been excluded.

A review of statistical methods literature revealed advantages and disadvantages to this sampling method. The disadvantage is that the sample will result in findings that are not generalizable to the general population, but on the other hand, the findings could provide the basis for further research or establish a link between this study and prior research findings (Bryman, 2008). Based on the researcher's estimates of the total population and calculations using statistical software, the estimated range for the sample size is *between* $N=142-212$ students (Calculators, 2011).

Sample size. The sample will consist of students who return the parental consent form granting permission to participate, signed by the parent or guardian, and who are in attendance on the day the surveys are administered. The sample size estimates are based on the average estimated numbers of fifth grade students from two to four elementary schools in the target district (approximately $N=225-470$ students). The minimum sample size was calculated using a 95% confidence level, and a confidence interval of 5. Based on the estimated population, the minimum sample size needed for this study is $N=123-140$ students (Calculators, 2011). The ideal sample for this study will consist of four to five school-level groups, and a number of within-school groups (based on the number of participating fifth grade classrooms). The school-level groups will be School A, a lower-performing elementary school (2010-2011 API scores 750 or below), and School B, a

higher-performing elementary school (2010-2011 API scores of 800 or above), both from the same district.

Demographics. The ideal schools to be used for this study would be located in a large, urban school district in Southern California. The ideal schools for this study would fit a structural model whereby classes are organized homogeneously, according to ability. The next best model would be one in which students are grouped heterogeneously and there are significant differences in within-school and within-class achievement levels. By examining the attitudes and beliefs of the population chosen for this study, the researcher seeks to gain a better understanding as to whether self-concept is dependent upon perceived individual and peer achievement within the context of the immediate social environment. The ideal achievement profile for each school would provide a wide range of school and class-average achievement. The stratification will be based on individual student performance levels in Math and Reading, as indicated by the following performance bands: Far-below Basic, Below Basic, Basic, Proficient, and Advanced.

In order to explore this relationship, the first step will involve an examination of academic achievement patterns to determine if there are any school-wide and within-school differences and to provide background information with respect to school status. The chart below shows the 2010 Academic Performance Index (API) for each participating school in comparison to other elementary schools throughout the MVUSD and State.

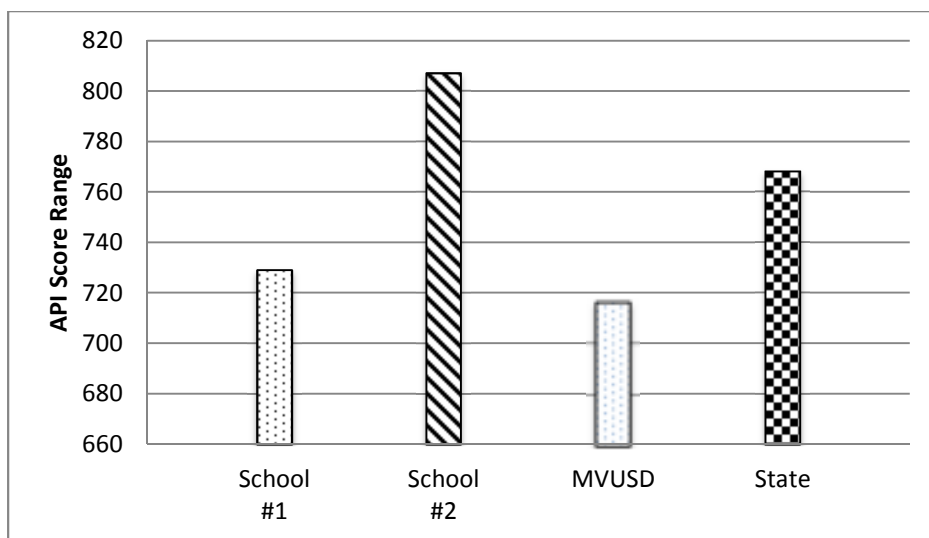


Figure 1. 2010 API Scores – Between-school, district and state comparison.

Figure 3 illustrates a stark difference between School #1's (729) and School #2's (807) API scores of on the CST (in ELA and Math). School #1 E.S.'s overall performance exceeds that of other elementary schools throughout the District; however, their 2010 score falls short of reaching the target API score of 800 (CDE-2, 2011) and falls short of the mean API of other District and State schools by a significant margin. School #2's API score meets the target by a slim margin, but ranks ahead of the average API of all elementary schools within the District and throughout the State. An examination of the 2011 API scores on the CST in ELA and Math revealed a similar pattern.

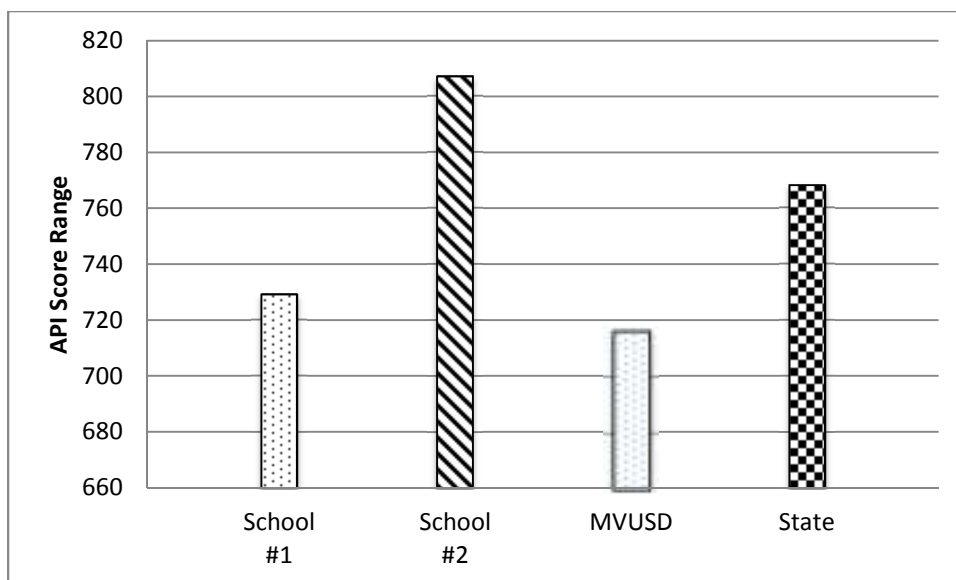


Figure 2. 2011 API Scores – School, district and state comparison.

In a similar comparison, Figure 4 shows the school-wide 2011 API scores in ELA and Mathematics of both School #1 and School #2 schools in comparison to elementary schools throughout the MVUSD and State. The same trend prevails in 2011, with School #1's API score exceeding the mean of other MVUSD elementary schools, but trailing the average mean throughout the State by a distinct amount, while on the other hand, School #2's API exceeds that of School #1, as well as the average mean score of elementary schools throughout the District and across the State. While the API scores School #1 and School #2 schools differed, significantly, an examination of the demographic characteristics (See Figures 3 and 4) of each school revealed some distinct similarities, as well as some notable differences.

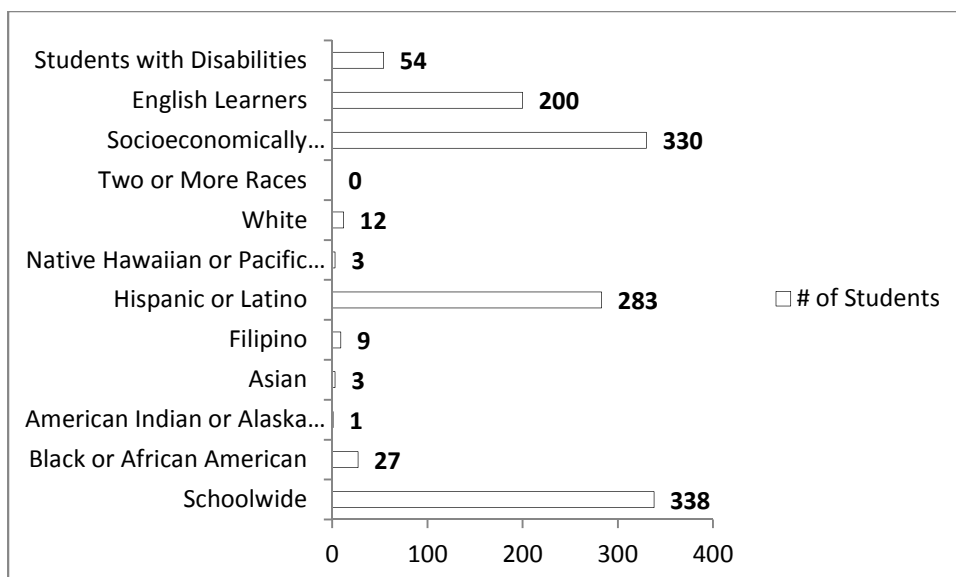


Figure 3. 2011 School #1 Elementary school demographic compositions. Adapted from CDE's 2011 Annual Progress Report (CDE-2, 2011).

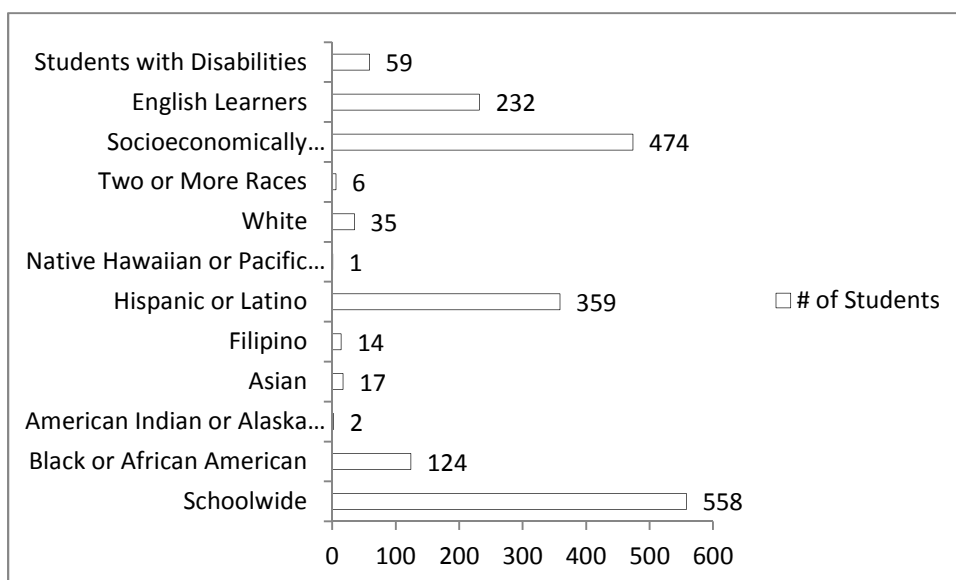


Figure 4. 2010-11 School #2 Elementary School demographic compositions. Adapted from CDE's 2011 Annual Progress Report (CDE-3, 2011).

As depicted in Figures 3 and 4, similarities exist with respect to the largest demographic group. For each school, the *socio-economically disadvantaged* (SED) subgroup is the largest. SED students represent 90% of the total combined population of

these two schools. School #1's SED population represents 98% of the total student body, and School #2's SED students make up roughly 87% of the total number of enrolled students. The second largest group for both schools is the *Hispanic* subgroup, followed by *English Learner* (EL) students.

There are some clear differences in the demographic characteristics of the two schools. School #1's ethnic groups consist largely of Hispanic students and a much smaller percentage of African-Americans. School #2's student body includes Asian and Filipino students, a small group in proportion to the whole; however, these subgroups add a new dimension with respect to exploring any similarities or differences in self-concept.

School inclusion criteria. The researcher considers ethnic composition an important characteristic upon which to base school inclusion criteria. Few investigations into self-concept and social comparison exist where the focus is on Hispanic and African-American students. Most studies use cross-national data from populations that do not represent the current environmental context of most school districts in the Southern California region. The researcher of the present study has established the criteria for inclusion requiring that at least 70% of the entire student population be Hispanic/Latino or African-American in an effort to increase the likelihood that a significant number of respondents will represent that targeted population. To identify schools that meet the inclusion criteria, the researcher reviewed each school's Local Education Agency (LEA) Plan from the MVUSD website which lists such demographic data for each school. The desired school characteristics will be based on the similar schools ranking indicators in accordance with the School Characteristic Index (SCI) follows:

1. Socioeconomic indicators (average parent education, percent of students participating in free/reduced-price meals);
2. Percent of students who are English learners (ELs) or have been redesignated as fluent English proficient (RFEP);
3. Percent of students from eight different racial/ethnic groups, including "two or more races";
4. Percent of students with disabilities;
5. Percent of students in the Gifted and Talented Education (GATE) program;
6. Teacher credentials (percent of teachers who are fully credentialed, percent with emergency permits);
7. Average class size in specific grade spans;
8. Percent of students first attending the school this year (i.e., school mobility);
9. Whether the school operates a multi-track, year-round educational program;
10. Percent of enrollment in specific grade spans by grade span; and
11. Percent of students in the Migrant Education Program, (Ed-Data, 2011).
12. The researcher will seek authorization from Moreno Valley Unified School District to conduct research in four (4) of the following schools based on demographic and student performance data, as follows:
 - Two Higher-Performing (API Scores of 800 and Above) Elementary Schools from the following:
 1. Hidden Springs* (867 API)
 2. North Ridge* (862)
 3. Chaparral Hills (821)

4. Ramona (821)
 5. Midland (814) and
 6. School #2 (811).
- Two Average to Lower-Performing (API Scores in the Range of 750 and below) from the following:
 1. Sugar Hill (754 API),
 2. Box Springs (751 API),
 3. Seneca (747),
 4. Sunnymead, (730)
 5. Sunnymeadows* (716),
 6. Butterfield* (712), and
 7. Armada* (692).

Schools with an asterisk (*) are considered ideal candidates based on the wide stratification of CST performance levels, as well as meeting the demographic criteria.

The schools listed above are desired targets; however, the researcher will consider other elementary schools for inclusion throughout the District, up to a maximum of five schools.

According to Ed-Data, the SCI values represent student demographic information, as well as teacher and school characteristics, to a lesser extent, and a low SCI value is often associated with lower test scores. Ideally, the schools selected to participate in the study would be schools that are listed in the same statewide, similar schools index, an indication that the schools share the same or very similar demographical characteristics. In the more likely event that the schools selected for the study do not appear in the same

similar schools index, the demographic indicators (e.g., *socio-economic background*; *parent education level*, *ethnicity* and *gender*) will be treated as confounding variables (variables that may potentially alter or confound the results of the study) in the final analysis and discussion.

Human Subjects Considerations

The schools selected for the present study will be recruited in concurrence with district policy. School recruitment will involve the solicitation of principals and teachers through the distribution of a recruitment letter (See Appendices B and C). Principals who accept the invitation to participate in the study shall receive a \$100 gift certificate upon completion of the study, and each participating teacher shall receive a \$50 gift certificate. As an incentive to increase the participation rate, each time a participating class achieves a 75% Permission form return rate or higher (regardless of whether a student has permission to participate or not) that school will be entered into a drawing to receive an additional \$100 honorarium. To recruit fifth-grade subjects, the researcher will distribute recruitment flyers to each cooperating fifth-grade teacher who will post the flyer on each fifth-grade classroom door and read the flyer aloud to introduce the study to students (See Appendix D). Each student who receives parental consent will receive a token gift (whether excluded or not) to express appreciation for volunteering and/or participating.

A team of expert reviewers, consisting of past and present fifth-grade teachers, will review the INCOM instrument to provide feedback and recommendations for grade-level appropriate modifications. Each expert reviewer shall receive a \$50 gift certificate and treated to a working lunch. The modified version will be sent to one of the authors of

the INCOM for review to elicit feedback with respect to the changes to ensure the original intent and fidelity has not been compromised. A fee for services will be offered to the expert reviewer of the INCOM based on the author's standard rate.

Taking into consideration the degrees of language proficiency and student literacy, the researcher, along with the team of expert reviewers, shall review the INCOM instrument to determine literacy level appropriateness for the targeted student population. The authors of the INCOM maintain that the instrument has proven to be reliable in studies using twelve and thirteen year-old subjects; however, the target population for the present study will be comprised of students with a variety of learning challenges. For this reason, the team will engage in a subjective process, based on instructional experiences teaching students similar to the targeted population, to identify and replace words or phrases that may pose a challenge with words more likely to be recognized by students with similar characteristics.

To ensure that the fidelity of the instrument remains unchanged, a copy of the modified version will be sent to one of the authors (Rick Gibbons) of the INCOM for review and constructive feedback. To test the reliability of the modified instrument, the researcher shall pilot test the new version of the INCOM with a group of students ranging from second to fifth grades to address a wide range of vocabulary, listening and reading competencies. In addition, the researcher shall seek students who fit the demographic characteristics of the targeted group (i.e., low to middle socio-economic class, urban residents, primarily African-American and Hispanic, with diverse cognitive abilities), by recruiting children among friends, colleagues and neighbors. The pilot testing will take place in a local, community library which provides a setting similar to what the

researcher anticipates will be provided for the actual testing in a school environment. The researcher and one trained, Spanish bilingual research assistant will conduct the pilot testing. The goal of the pilot test will be to practice the administration of the survey, respond to and record questions posed by pilot subjects for evaluative purposes. The questions will be categorized into various types of concerns (e.g., word meaning, interpretive, relevance/clarity of scale responses, etc.) and examined for consideration of further revisions.

The researcher shall hire and train two research assistants (one of which will be Spanish bilingual) for the sole purpose of assisting with the proctoring of the two surveys. The research assistants will be certificated teachers or teacher credential candidates seeking or having acquired a Bilingual Cross-cultural, Language and Academic Development (BCLAD) credential. The research assistants shall receive \$20 per hour for each day of administration of the survey, plus two hours of paid training on the methods for administering the Piers-Harris 2 instrument. In addition, each research assistant will complete 4 hours of paid, on-line training in the protection of human subjects. The instructions include explicit directions in the following areas:

1. Distribution of identification numbers to students (in lieu of names);
2. Reading of scripted instructions to students in group settings;
3. Procedures to check for understanding before and during administration;
4. Protocol for answering student questions during administration (e.g.,

“Everyone feels different at different times and in different situations. You should try to answer questions in a way that tells how you usually feel” (Piers, 2002, p.8) ;

5. Avoiding the use of the word “test” and reassuring students with respect to confidentiality of their responses;
6. Administration of the Spanish language version of each instrument (if necessary);
7. Collection and inspection of instruments for invalid responses (e.g., both “yes” and “no” answers selected, skipped items, or otherwise illegible);
8. Procedures for assisting children with the review and completion of invalid responses (Piers, 2002).

To provide environmental consistency, the researcher shall coordinate with the school-site administrator to acquire a well-lit, quiet room with enough desk space for each student for each administration.

The researcher shall work in tandem with the district representative to coordinate, provide support and guidance to teachers and research assistants, distribute and collect materials and perform all other activities associated with the study. The district’s coordinator shall facilitate the dissemination of the parent inform and consent letters to gain permission for each student’s participation in the study. A randomized sample will be produced from the number of positive responses to the survey solicitation letter, evidenced by signature of the parent/legal guardian(s) of each student.

Instrumentation

In this study, two separate instruments will be used to collect data representing self-concept and comparison orientation. The survey instruments are designed to elicit background information based on human attitudes and behaviors (e.g., existing self-perceptions of academic competence, motivation, and social and academic behaviors).

Table 2 provides a complete description of each instrument. An in-depth discussion of these instruments will appear in the following sections.

Table 2

Measurement and Instrument Summary

Instrument	Variables Measured	Range of Scores
Piers-Harris Children's Self-Concept Scales (PH2)	Behavioral Adjustment (BA) Intellectual/School Status (INT) Physical Appearance (PHYS) Freedom From Anxiety (ANX) Popularity (POP) Happiness/Satisfaction (HAP)	0-60 (based on Y/N)
Iowa-Netherlands Comparison Orientation Measure (INCOM)	General Social Comparison Orientation; Comparison of Ability Comparison of Opinion Upward Subscale, Downward Subscale	1-5 Scale Range 6 – 60 (6 items) 6 – 60 (6 items) 2 – 10 (2 items) 2 – 10 (2 items)
Academic Performance Index (API)	School-wide Academic Performance	200-1,000
Mean Scale Scores	Individual Performance in Reading and Math on CST	150-600
Class-average achievement in Reading and Math	Percent Advanced Percent Proficient Percent Basic Percent Below Basic Percent Far-Below Basic	0-100%

The Piers-Harris Children's Self-Concept Scale (PH2). The PH2 is the latest version of the original instrument of the same title, originally published in 1963. The instrument has been reduced from 80 to 60 questions to minimize the time for administering the survey and to exclude obsolete language or less psychometrically-valuable information (Butler & Gasson, 2005). The PH2 provides self-reports of perceptions relating to school, intellectual ability, appearance, and social acceptance in children and adolescents (ages 7-18). The questionnaire contains six subscales: Physical Appearance and Attributes, Intellectual and School Status, Happiness and Satisfaction,

Freedom from Anxiety, Behavioral Adjustment, and Popularity (Piers, 2002).

Improvements in the PH2 over the original version include the re-norming of the scale, using a larger and more diverse sample. A new computer scoring feature and the clarity and ease of following the manual's instructions are additional benefits (Piers, 2002).

The reliability of the PH2 has been reported in several reviews. With nearly all Cronbach alphas at or above .70, the instrument's internal consistency estimates for all domain scores are adequate. Test-retest reliability studies has not been confirmed in multiple studies for the PH2 version; however, test-retest reliability conducted in the Butler & Glasson (2005) review reported an internal consistency score of .91 and related domain scores of .74 - .81, and the test/retest scores were .69 (2 weeks) and .75 (10 weeks). Overall, the review of the PH2 instrument support the reliability and validity claims of the authors, but warn that further evaluation using the revised scale is warranted. Appendix E provides an example of the instrument.

Iowa-Netherlands comparison orientation measure (INCOM). The INCOM is one of the few instruments available that is designed to measure social comparison orientation (Gibbons & Buunk, 1999). Figure 2 provides an example of the instrument. Consistent with Festinger's 1954 social comparison theory, the INCOM addresses self-evaluation as a primary goal of social comparison. Self-evaluation is divided into two categories: ability and opinions.

With respect to internal consistency, the reported Cronbach alpha was .83, and the corrected item-total correlations was greater than .36. Across the samples, the alpha was consistent, ranging from .78 to .85 in the American sample, and from .78 to .84 in the Dutch samples, which are considered adequate by Nunnally (Gibbons & Buunk, 1999).

The INCOM questionnaire developed by Gibbons and Buunk (1999) is comprised of questions that measure comparison orientation and are categorized according to their function. As proposed by Festinger (1954), social comparison can be viewed as an individual's propensity to engage in *comparison of abilities* or demonstrate an interest in *comparison of opinions* with significant others. Table 3 displays the categorical distribution of the statements in the modified version of the INCOM used for this study:

Table 3

INCOM- Categorical Distribution of Items

Item No.	Category
1, 2, 3, 5	Comparison based on <i>ability</i>
6, 7, 8, 9	Comparison based on <i>opinion</i>
4, 10	<i>Acquiescence</i> or <i>Negative Response Bias</i>
11 & 12	<i>Upward</i> comparison (<i>ability & opinion</i>)
13, 14	<i>Downward</i> comparison (<i>ability & opinion</i>)

The original INCOM scale included two reverse-coded items – “I am not the type of person who compares often to others” and “I never consider my situation in life relative to that of other people” – within each category, both of which were designed to detect negative response bias (Gibbons & Buunk, 1999). For the purpose of this study, the researcher and team of reviewers concluded that the negative phrasing, along with the use of a 5-point scale might present a challenge with respect to decoding meaning for participants whose primary language is not English. Since a substantial number of the participants were English learners, negative response bias will still be addressed in items 4 and 10 through the use of a Likert scale ranging from 1-5, where 1 = *Never*, 2 = *No*, 3 = *Sometimes*, 4 = *Yes*, and 5 = *Always*. Since the INCOM was designed and tested using adolescent and adult subjects, the researcher for the present study, along with a team of four education professionals, combined efforts to serve as expert reviewers to make slight

language adaptations in order to make questions more suitable for the known average language proficiency of a population of fifth-grade students with demographic characteristics similar to the target student population. An example of the modified INCOM is depicted in Appendix F.

To assess the validity of the INCOM, the Gibbons and Buunk (1999) used the known-groups validation technique to test the hypothesis that there would be distinct differences between the two countries in the level of comparison orientation (CO). The researchers cited other studies that were consistent with their findings to support their expectation that the American mean level of CO would be higher than that of the Dutch sample. The researcher for the present study anticipates that CO in the target students would be higher than their international counterparts, as well. Correlations between the questions in each instrument and each variable are outlined in

Table 4

Correlation between Variables and Research Questions

Instrument	Variable Name	Research Question	Survey Item
Self-Concept – Piers Harris 2	A. Total self-concept (TOT) and Sub-domains (/INT/BEH /PHY/FRE/HAP)	1. To what extent, if at all, is there a statistically significant relationship between self-concept and academic achievement?	1-60
	B. Intellect/School Status(INT)	a. To what extent, if at all, are there any between-school?	5, 7, 12, 16, 18, 21, 22, 24-26, 34, 39, 43, 50, 52, 55
	C. Intellect/School Status(TOT)	b. To what extent, if at all, are there any within-school differences?	5, 7, 12, 16, 18, 21, 22, 24-26, 34, 39, 43, 50, 52, 55

(continued)

Instrument	Variable Name	Research Question	Survey Item
INCOM: Comparison Orientation	D. Comparison Orientation (CO)	2. To what extent, if at all, is there a statistically significant relationship between CO and self-concept?	1-14
	E. Comparison Orientation (CO)	3. To what extent, if at all, is there a statistically significant relationship between SCO and academic self-concept?	1-14

Data Reporting and Analysis

The study will employ three separate analyses. First, all participants will be compiled into one group and rank ordered according to achievement level in reading and math. On the basis of their rank ordering, individual students will be assigned to one of five groups based on achievement levels in the reading and math sections of the STAR assessment: Far-below basic, Below-basic, Basic, Proficient, and Advanced. The between group achievement data will be computed using Analysis of Variance (ANOVA) calculations. Self-concept (SC) and Comparison Orientation (CO) will be measured in the form of attributes and serve as the independent variables with achievement cluster scores being the dependent variable. Second, the researcher will apply within-class rank ordering of the participants, based on the same five grouping stratifications according to aforementioned achievement levels. Finally, within-class achievement levels for each group will be pooled together school-wide across classrooms, and between group ANOVAs will be computed to identify unique patterns. The researcher will use SPSS software to run the ANOVA calculations, based on a confidence interval of $<.05$, to determine the statistical significance of correlations between self-concept, achievement and comparison orientation.

Procedures

The two survey instruments to be administered to the participants are the PH2 and the INCOM. The data gathering process will involve the collection of phenomenological data through the use of the two surveys. The surveys will be administered during a single interval with respondents providing self-reports. Taking into consideration students' age level and variations in reading ability, classroom teachers shall prepare the students prior to administering the survey by providing careful, detailed instructions. As recommended by the PH2 designers, respondents in grades five and below will have the survey administered to them orally (Piers, 2002).

There is no time limit for the administration of both questionnaires; however, the designers of the PH2 indicate that most children should be able to self-complete the measure, autonomously, within 10-15 minutes (Piers, 2002). For the present study, the researcher and/or research assistants shall conduct the survey orally; therefore, the administration time may vary, according to the needs of each group. The researcher does not anticipate that oral administration of the PH2 will take more than 30 minutes. With fewer questions on the INCOM (15 questions), the researcher estimates the timeframe for the administration of the survey (including instruction delivery) to be approximately 5-10 minutes. The researcher will follow the procedures as outlined below to conduct the study.

1. The researcher will seek authorization to conduct study from district by completing a Request for Approval of Research. Permissions & Recruitment:
(a) the researcher shall complete and submit the Moreno Valley School District's Request to Conduct Research form. The district coordinator provide researcher with an informal letter or e-mail, indicating the District's approval to conduct research in the targeted elementary schools for submission to

Pepperdine University's Institutional Review Board (IRB). (b). The District's coordinator shall solicit participation of interested school principals and forward to the Principal Researcher (PR) a list of school sites interested in participating in the study. The researcher shall request and receive e-mail addresses of each interested school-site principal for communication and recruitment purposes.

2. Procedures For Gaining Permission For Coopering Individuals:

- Upon receipt of District approval, researcher shall deliver a School Recruitment Letter and Fax Back Form (Appendix B). Within 2 days, PR will contact each school's principal by telephone (See Script, as Appendix G) to introduce herself, the research project, and confirm their interest and provide approval to solicit the cooperation of teachers and recruit students. In addition, the researcher shall attach a copy of all recruitment and consent materials for review: Teacher Recruitment Letter (Appendix C), Minor Assent Letter (Appendix H), Parent Informed Consent (Appendix I), Student Recruitment Flyer (Appendix D), Participant Checklist (Appendix A), as well as a copy of both instruments Piers-Harris 2 (Appendix E), and Iowa-Netherlands Comparison Orientation Measure (INCOM; Appendix F).
- Teacher Recruitment: The researcher shall introduce the study to fifth-grade teachers by invitation of the principal at a staff development or other session. Researcher shall review and discuss the Teacher Recruitment Letter/Agreement (Appendix C) and the Research Protocol and Procedures (Appendix J), which describe the project and outlines school personnel and researchers' roles and responsibilities. PR shall collect signed agreements at the meeting and distribute Student Recruitment Flyer (Appendix I), Parental Informed Consent Letters (Appendix H), Participant Checklists (Appendix D), and a sample copy of the Piers-Harris 2 instrument (Appendix E) and the INCOM (Appendix F).

- Student Recruitment will be carried out by invitation in the form of a Student Recruitment Flyer (See Appendix D). The classroom teacher will read aloud the flyer and distribute the consent letters to all students to take home to their parents.
- Teachers shall collect all consent letters and use the Participation Checklist to record the names of students who return consent forms, indicating whether they have permission to participate or do not.
- Teachers shall use the Participation Checklist to indicate which students meet the criteria for exclusion, as follows:

Exclusion Criteria: In accordance with recommendations provided in the Piers-Harris 2 manual, and as indicated in the Teacher Recruitment Letter/Agreement, teachers shall complete the Exclusion Criteria section of their class Participation Checklist, listing the names of students who meet the following criteria:

1. uncooperative,
2. overtly hostile,
3. uncommunicative,
4. prone to exaggeration or distortions
5. exhibit disorganized thought processes
6. exhibit low-cognitive ability that interferes with comprehension, students with low English-language and/or home-language verbal ability,
7. students with other learning challenges that may interfere with or impede the accuracy of responses

Students meeting the above criteria shall be excluded from participation, based on classroom teacher recommendations (PH2, 2002). On the other hand, Spanish-speaking participants (identified by classroom teacher, provided they have Spanish-language verbal ability, shall be included in the study and a Spanish-language version of each survey shall be administered to them by a trained Spanish-bilingual research assistant. Teachers shall complete the

checklist on the established deadline for returning all consent forms and return the Participant Checklist to the principal for retrieval by the PR.

Explanation for Exclusion: Should students and/or parents inquire as to the reason a child was excluded from the study, the following script shall be followed:

1. “While the study’s aim is to be more inclusive, it is not always possible due to many factors. To maintain anonymity, we do not retain specific information for each child who is excluded; however, it is possible to provide you with a list of potential reasons for exclusion:
 - The number of students returning permission forms far exceeded the resources available for this study;
 - A child did not meet specific criteria developed by the manufacturer of one of the instruments (criteria not made public to protect the privacy of individuals excluded from study.)
2. Explanation for Removal from Study:
 - Behavior or disciplinary action;
 - Child demonstrates inability to comprehend questions or complete questionnaire correctly;
 - Exhaustion, tiredness or inattention to the extent that child is unable to complete questionnaire in a reliable manner.

All information regarding exclusions will be kept private and confidential.

- The day following the deadline for returning consent forms, teachers shall package consent forms along with the Participation Checklist and return them to the principal who will hold each classroom’s consent materials until all have been returned. The researcher shall retrieve all consent materials from the principal’s office when the principal has notified PR

that all consent materials have been collected (See Research Study Protocol and Procedures, Appendix J).

- The PR shall return a copy of each classroom's Participant Checklist to the principal for distribution to each teacher. Teachers shall use the checklist to plan and prepare quiet activities for the day of administration for those students who are not participating in the study.

Protection and Safekeeping of Data: Extra precaution will be taken to ensure that identifying data does not appear in any of the reported results and raw data collected will not be shared with anyone other than the dissertation's supervising chair. To protect the identity of each individual, students will be coded according to assigned categories (i.e., academic performance level, ethnicity, and gender) and no other identifying information will be used in the final analysis and report of findings.

Parental Consent Forms: Collection of Parental Informed Consent letters: Teachers shall collect consent forms, daily, logging each student's status on the Participant Checklist, and keeping the consent forms and checklist in the labeled folder provided by the PR in a secure, desk file until the end of the collection period.

Participant Checklist: Teachers will complete the Participant Checklist to include all students who meet the exclusion criteria or require Spanish administration of the surveys. At the end of the collection period, the teacher will submit the Participant Checklist to the principal, who will notify the PR when all checklists and consent forms have been returned. The principal will keep the checklists and consent forms in his/her office in a secure file while awaiting PR retrieval.

Raw Data: Student data will be entered into an Excel program, initially. The Excel database files will be password protected. The

password will be shared only with the supervising faculty chairperson. The PR will transfer the Excel data files to an SPSS database program and randomly assign coded numbers to each participant. The coded list shall be kept separate from any identifying student data in the Excel program and both data files shall be password protected. Upon completion of the study, all hard copies of data gathered will be kept in a locked safe by the principal investigator for a period not to exceed three (3) years, after which time, all raw data shall be destroyed by shredder.

All raw data kept in computer files will be password protected. All raw data in hard copy format will be kept secure in the home of the principal investigator in a file inside of a locked, combination safe during the period prior to collection of the assent forms and gathering of data. Access to the raw data will be limited to the PR and the supervising chair with PR.

All completed surveys, consent forms and identifying data and coded lists shall be kept separate from any identifying student data lists, under lock and key. Upon completion of the study, the data gathered will be kept in the same location in the locked safe, belonging to the principal investigator for a period not to exceed three (3) years, after which time, all raw data shall be destroyed by shredder.

All student data (surveys, school personnel agreements, and consent/assent forms) collected in the conduct of this study will be kept in the possession of the principal researcher in a home-office safe on the premises of the researcher's place of residence at 4235 Walnut Avenue, Long Beach, California 90807-3024.

Collection of Parental Informed Consent letters: Teachers shall collect consent forms, daily, logging each student's status on the

Participant Checklist, and keeping the consent forms and checklist in the labeled folder provided by the PR in a secure, desk file until the end of the collection period.

Participant Checklist: Teachers will complete the Participant Checklist to include all students who meet the exclusion criteria or require Spanish administration of the surveys. At the end of the collection period, the teacher will submit the Participant Checklist to the principal, who will notify the PR when all checklists and consent forms have been returned. The principal will keep the checklists and consent forms in his/her office in a secure file while awaiting PR retrieval.

Student data will be entered into an Excel program, initially. The Excel database files will be password protected. The password will be shared only with the supervising faculty chairperson. The PR will transfer the Excel data files to an SPSS database program and randomly assign coded numbers to each participant. The coded list shall be kept separate from any identifying student data in the Excel program and both data files shall be password protected. Upon completion of the study, all hard copies of data gathered will be kept in a locked safe by the principal investigator for a period not to exceed three (3) years, after which time, all raw data shall be destroyed by shredder.

- **Acquiring Assent:** On the day the surveys are administered, the Minor Assent Form (see Appendix H) will be distributed and read aloud to students. Each participant shall sign the assent, indicating their willingness to participate in the study and keep a copy if requested. The Researcher and Research Assistants shall collect all assent forms and match them to the Participation Checklist. When it has been verified that all participants have submitted signed Parental Informed Consent and

Minor Assent forms, Researcher shall commence with the implementation of the study.

- Administration: Students who have not returned signed consent letters shall be seated in an area away from participants and provided with a quiet activity by their teacher who will supervise them during administration. Prior to administration of the questionnaires, the PR shall distribute to each student, 2 copies of the Minor Assent Form (Appendix H) to the participants. The PR shall read aloud the contents of the form and ask students if they have any questions. When all questions have been answered, PR shall ask if there is anyone who does not wish to participate. If there are students who do not wish to participate, they will join their classroom teacher in the designated area to engage in a quiet activity along with other students who are not included in the study. Finally, the remaining participants will be asked to sign the Minor Assent Form, keep a copy, and be administered the surveys.

3. Matching Academic Performance Data:

- Researcher shall obtain academic performance data from the District's coordinator, disaggregated by classroom, individual and subgroups. The researcher will create an alphabetical participant database file in Excel on Sheet 1. On Sheet 2, the Researcher shall create a numbered list (linked to Sheet #1), using the Random Generator function to assign a number to each student. On separate Excel Sheet (Sheet # 3), Researcher shall create a spreadsheet with individual academic performance data (CST scores in ELA and Math), linked to Sheet #2
- The Participant Database file will be linked with CST data (disaggregated by classroom); however, access to each file will require the use of a password. Participants' scores will be extracted and entered into a separate database file making it

impossible to match performance data with student identifying information without the password key (sheet #3).

4. The researcher will assign each school an identifying code and create a separate Excel spreadsheet for each school, consisting of column headers as follows: (a) School-wide API; (b) Class-Average Mean Scale Scores – Reading; (c) Class-Average Mean Scale Score – Math; (d) School-wide Self-Concept (SC) TOT, and (e) Class-Average (SC) TOT; and (f) School-wide Comparison Orientation (CO), and (g) Class-Average (CO).
5. The researcher will acquire the 2009-2010 and 2010-2011 STAR test results from the CDE's Data Quest web site and the district's data system.
6. The researcher will acquire a list of each school's individual scaled scores segregated by fifth grade classrooms from the District coordinator. The researcher will calculate and record each fifth grade classroom's average achievement based on the following categories of achievement in reading and math: Far-Below Basic, Below-Basic, Basic, Proficient and Advanced.
7. The elementary schools will be separated into two groups. Group A will consist of schools characterized as higher-performing (2010-2011 API scores of 800 and above), and Group B will consist of schools characterized as lower-performing (2010-2011 API scores of 750 and below).
8. The researcher will complete an ANOVA calculation for each school of the percentage of students considered Proficient and Advanced, as well as the percentage of students considered Basic and below, to identify any statistically significant differences between participating schools. A

confidence level of $<.05$ will be used to determine the statistical significance of the calculations.

9. The researcher will use the 2010-2011 STAR test results from the CDE's Data Quest web site and the district's data system to compile reading and math mean scale scores, disaggregated and recorded by classroom and significant subgroup.
10. The mean scale scores for ELA and mathematics will be used to calculate an ANOVA for each school/classroom and significant subgroups to determine if there is a statistically significant difference. Again, a confidence level of $p < .05$ will be used for this purpose.
11. The attributes of Self-Concept (SC) and Comparison Orientation (CO) will be recorded for each individual and segregated by classroom and at the school level in separate Excel spreadsheets. Using these attributes, the researcher will complete ANOVA calculations to identify any correlations between these variables. Another ANOVA calculation will be performed to identify correlations between SC, CO, and achievement.
12. Each school's API scores and class-average achievement in reading and math, along with average SC and CO, will be presented in summary tables and analyzed for distinctive patterns and trends.

Methodological Assumptions

The researcher for the present study has designed this study making the following assumptions:

1. Standardized test scores are generally an accurate representation of student achievement levels.
2. In general, individual STAR test scores in reading and math are generally consistent with student classroom achievement.

Limitations

The researcher for the present study must rely on the assumption that school-wide and within-class performance data on the CST is an accurate representation of student abilities. Another limitation is the lack of a model for utilizing the INCOM as an instrument for children of the same age group as the population for the present study.

Summary

The primary goal of this study is to explore the relationship between self-concept and achievement through the lens of the socialization process of social comparison in the elementary school setting. This study will highlight the extent to which children make self-evaluative judgments about their own competence based on the perceived performance of their peers. This premise is supported by the findings of various researchers who have reported that self-concept depends largely on perceived performance of peers (Guay et al., 1999; Molloy et al., 2011; Rogers et al., 1978). In addition, this investigation will add to the existing literature and provide additional information to support further study with respect to developmental differences in self-concept in the context of socialization processes.

The instruments to be used for this study will test the hypothesis that achievement depends on self-concept and individual perceptions of academic achievement, as well as

social comparison orientation. The use of ANOVA computations in the analysis will highlight any correlations that exist between these and the other variables.

This study carries one significant limitation with respect to the data collection process. The survey instruments may not be appropriate for all respondents due to variations in English literacy and reading comprehension. Taking this into consideration, the researcher must rely on each teacher to verbally administer each survey, as suggested in the Piers-Harris manual for respondents in grades five and below. Should classroom teachers be unwilling to read aloud the questions, the researcher shall provide trained research assistants to assist respondents who may lack language proficiency; however, the identification of such individuals must rely solely upon the input of the classroom teachers.

Chapter Four: Results

This study explored the relationship between self-concept, social comparison orientation and achievement in fifth-grade students in a San Bernardino County culturally diverse school district. In addition, the study will seeks to highlight any patterns and trends associated with social comparison and academic achievement.

There were three questions that guided the study: The first area of inquiry explored the relationship between self-concept and achievement patterns based on the 2011 California Standardized Test (CST). The second area of inquiry examined whether there is a relationship between the various dimensions of self-concept and social comparison orientation. The third question explored the relationship between comparison orientation and academic achievement. The achievement patterns, as well as the attitudes and self-beliefs of the students, were further examined to determine if there were any distinct correlations between any of the variables. The research questions that guided this aspect of the study were as follows:

1. To what extent, if at all, does a statistically significant relationship exist between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do any between-school differences exist in the relationship between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do there any within-school differences exist in the relationship between self-concept and academic achievement among fifth grade students?

2. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and self-concept?
3. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and academic achievement?

This chapter is divided into three sections. The first section focuses on the relationship between self-concept and academic achievement and addresses research question 1 and its subparts. This section includes descriptive and inferential statistical data related to school-wide achievement data based on 2011 CST performance in Math and English Language Arts (ELA). Additionally, this section includes data representing *Total Self-concept* (TOT) and its related subdomains: *Behavior* (BEH), *Intellect* (INT), *Physical* (PHY), *Popularity* (POP), and *Happiness* (HAP). Descriptive statistical data is followed by inferential statistical calculations using analysis of variance (ANOVA) and regression analysis. This section is further broken into subsections that examine between-school and within-school differences in the relationship between self-concept and academic achievement.

The second section focuses on the variable *social comparison*, and addresses research questions Two and Three. Question Two explores that relationship between *comparison orientation* (CO) and self-concept, and the third question focuses on the relationship between CO and academic achievement (ELA and math scaled scores). An investigation of descriptive and inferential statistical data revealed distinctive patterns and trends in the relationship between CO and the variables, self-concept and academic achievement. ANOVA calculations were performed to determine the extent to which there are any similarities or differences between self-concept and CO. Chi-square

calculations were performed utilizing the two attributes, academic achievement as measured by performance level in ELA and Math (PLELA and PLMath) and CO to determine the extent to which there were any notable similarities or differences.

Research Question One

The first research question examines the relationship between total self-concept (TOT) and academic achievement as measured by the participants' 2011 CST scaled scores in Math and English Language Arts. An examination of the descriptive statistics provided the necessary background information and an overview of the data. The inferential statistical calculations included an analysis of variance (ANOVA) which was used to compare the means of the dependent variables, English language arts scaled scores (SSELA) and math scaled scores (SSMath) categorized by the participant groups, *teacher*, *gender*, and *ethnicity*. The tables in this section are the result of an analysis of variance calculation which provides insight as to whether there are any statistically significant differences in total self-concept among participant groups. In addition, this section will explore any between-school and within-school differences in the relationship between CST performance and self-concept.

To establish an understanding of the nature of the self-concept and achievement status of each school's participants, the first step involved computing descriptive statistics for academic achievement as measured by ELA and math scaled scores. As indicated in chapter three, the target for proficiency in ELA and math is a scaled score of 350. An examination of Table 5 determined if there were any between-school differences in the mean ELA and math scaled scores between School #1 and #2.

School-average achievement. As illustrated in Table 5, the mean ELA and math scaled scores for each school are at or above the 350 proficiency target. While each school's mean score meets the target, there is, approximately, a 20 point difference in each subject with School #2 having the higher mean scores. To provide additional insight into the nature of these differences, classroom-average achievement was explored and a within-school comparison was calculated and the results depicted in Tables 6 and 7.

Table 5

Mean Comparison of ELA and Math Scaled Scores

	School	N	Mean	Std. Deviation	Std. Error Mean
SSELA	School #1	22	353.68	44.125	9.407
	School #2	54	373.89	48.997	6.668
SSMath	School #1	22	361.68	69.138	14.740
	School #2	54	382.04	70.723	9.624

Table 6 offers insight into the extent to which there are any within-school differences in classroom-average achievement by examining the mean scale scores of participant groups categorized by teacher. This table shows that there are very high statistically significant differences between classroom groups in the mean scale scores in ELA and math for each school. The next step was an investigation of the analysis of variance (Table 7) in the mean scaled scores according to gender.

Table 6

ANOVA of Classroom-Average Achievement Classified by Teacher

School		Sum of Squares	df	Mean Square	F	Sig.
School #1	Between Groups	25169.542	1	25169.542	32.028	.000
	Within Groups	15717.231	20	785.862		
	Total	40886.773	21			
SSMath	Between Groups	42938.294	1	42938.294	14.949	.001

	Within Groups	57A444.479	20	2872.224		
	Total	100382.773	21			
	Between Groups	44711.754	4	11177.938	6.637	.000
SSELA	Within Groups	82525.579	49	1684.195		
	Total	127237.333	53			
School #2	Between Groups	61193.331	4	15298.333	3.676	.011
	SSMath	203900.595	49	4161.237		
	Total	265093.926	53			

Note: Groups based on classroom assignment by teacher.

Table 7

ANOVA ELA/Math Means Comparison by Gender

School		Sum of Squares	df	Mean Square	F	Sig.	
School #1	Between Groups	2297.823	1	2297.823	1.191	.288	
	SSELA	Within Groups	38588.950	20	1929.448		
		Total	40886.773	21			
	Between Groups	29256.223	1	29256.223	8.227	.010	
	SSMath	Within Groups	71126.550	20	3556.327		
		Total	100382.773	21			
School #2	Between Groups	5048.751	1	5048.751	2.149	.149	
	SSELA	Within Groups	122188.582	52	2349.780		
		Total	127237.333	53			
	Between Groups	34.426	1	34.426	.007	.935	
	SSMath	Within Groups	265059.500	52	5097.298		
		Total	265093.926	53			

Note: Groups classified by gender.

Table 7 indicates that, in general, gender is less of a factor in the relationship between gender and achievement, with one exception; there is a highly significant relationship between Mathematics scaled scores and gender for School #1 participants.

Finally, *ethnicity* was used as a factor and the results depicted in Table 8.

Table 8

ANOVA ELA/Math Means Comparison by Ethnicity

School		Sum of Squares	df	Mean Square	F	Sig.	
School #1		Between Groups	25169.542	1	25169.542	32.028	.000
	SSELA	Within Groups	15717.231	20	785.862		
		Total	40886.773	21			
		Between Groups	42938.294	1	42938.294	14.949	.001
	SSMath	Within Groups	57444.479	20	2872.224		
		Total	100382.773	21			
School #2		Between Groups	44711.754	4	11177.938	6.637	.000
	SSELA	Within Groups	82525.579	49	1684.195		
		Total	127237.333	53			
		Between Groups	61193.331	4	15298.333	3.676	.011
	SSMath	Within Groups	203900.595	49	4161.237		
		Total	265093.926	53			

Note: Groups based on ethnicity.

An examination of the ANOVA presented in Table 8 revealed a highly significant relationship between the factor, ethnicity¹, and academic achievement for participants at each school, within and between classroom groups. In both ELA and math, the p values were far below the .05 p value adopted for this study, so ethnicity could be used to explain the variance in scaled scores for each school. To test the hypothesis that a relationship exists between perceived classroom-average achievement and self-concept (Rogers et al., 1978), Figure 5 provides within-school achievement data that were used to identify patterns or trends.

¹ Ethnicity – The ethnic composition of the study’s participants was obtained via convenience sampling method; therefore, the findings with respect to ethnicity may not be generalizable to the larger population of students.

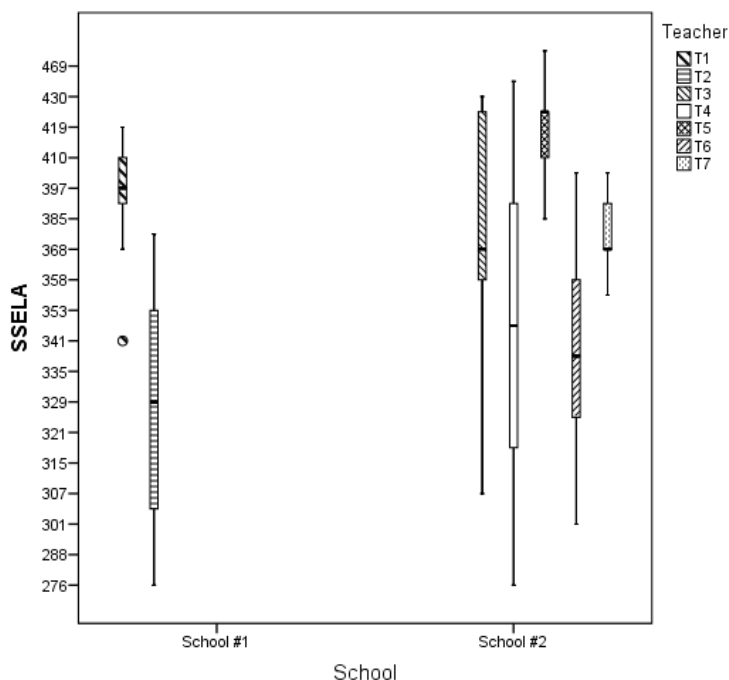


Figure 5. Comparison of mean ELA scaled scores by teacher.

Classroom-Average Achievement

Within-school differences (ELA). At School #1, the participants assigned to Teacher 1 (T1) have a much higher ELA mean scaled score than do the students assigned to Teacher 2 (T2). The mean ELA scaled score for the participants assigned to T2 is significantly lower than the ELA proficiency target of 350. The data for School #2 shows that there is more variation in the mean ELA scale scores and three of the five participant groups have a mean ELA scaled score that is higher than the target. Similar to School #1, there is a wide stratification between each classroom groups' mean ELA scaled score. This result supports further examination of the Big-fish-little-pond-effect (BFLPE) which hypothesizes that students compare their individual performance to the performance of their peers and use this data as a basis for developing attitudes, beliefs and self-concept, and when faced with higher-performing targets for comparison, the result is a contrastive effect (Marsh, 1984). The next step involved the gathering of data relating to academic

achievement in mathematics. A comparison of the Mathematics mean scaled scores was conducted and the results depicted in Figure 6.

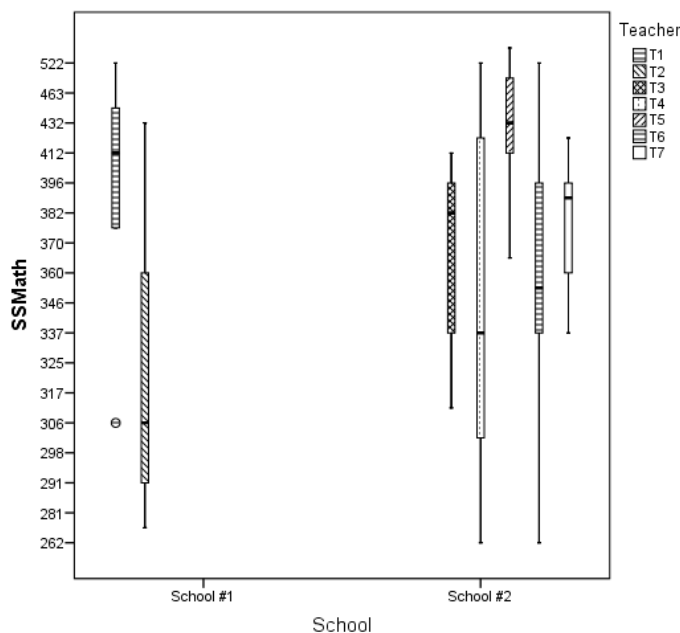


Figure 6. Box plot comparing mean CST math scaled scores by teacher.

Within-school differences (Math). As depicted in Figure 6, there are significant differences between classroom participant groups. The difference in the mean math scaled score between T1 and T2 at School #1 is greater than 100. Though not as drastic a difference, the variation in math scaled scores between classroom groups for School #2 is substantial. With such diversity in math classroom-average achievement, there is much opportunity to explore patterns and trends in relation to self-concept. The next step in the data gathering process included the analysis of data relating to self-concept.

The data (self-concept). In this study's exploration of the relationship between self-concept and academic achievement, academic self-concept was not considered the

primary focus. The decision not to focus on academic self-concept, specifically, contradicts studies that indicated more significant BFLPEs on academic self-concept, rather than global self-concept or any other domain or component of self (Marsh and Parker, 1984; Marsh 1987). This study explores the various subdomains of self-concept that may be significant factors in the relationship between self-concept and achievement in the current setting. Total self-concept (TOT), the global measure of an individual's self-perception is comprised of the subdomains of *Behavior* (BEH), *Intellect* (INT), *Physical* (PHY) image, *Popularity* (POP), *Freedom from Anxiety* (FRE), and *Happiness* (HAP). TOT reflects the student's global view and appraisal of their opinions, attitudes, beliefs and behaviors.

Research shows that self-concept is multidimensional and individuals view themselves differently depending on the context. Being that the demographic groups represented in this study consisted primarily of Hispanic, African-American and other ethnic minorities not normally represented in the cross-national studies included in the literature review, and because socialized values and beliefs about education may differ, this study explored total self-concept and its subdomains. Table 9 provides a summary and interpretation of the scale score ranges for the PH-2 scale:

Table 9

Interpretation of Piers-Harris 2 T-Score Ranges

T-Score Range	Percentile Range	Interpretive Label
Total (TOT) Scale		
≤29T	≤2	Very Low
30T-39T	3-14	Low
40T-44T	15-28	Low Average
45T-55T	29-71	Average

<i>56T-59T</i>	<i>72-83</i>	<i>High Average</i>
<i>60T-69T</i>	<i>84-97</i>	<i>High</i>
<i>≥70T</i>	<i>≥98</i>	<i>Very High</i>

Domain Scales		
<i>≤29T</i>	<i>≤2</i>	<i>Very Low</i>
<i>30T-39T</i>	<i>3-14</i>	<i>Low</i>
<i>40T-44T</i>	<i>15-28</i>	<i>Low Average</i>
<i>45T-55T</i>	<i>29-71</i>	<i>Average</i>
<i>≥56T</i>	<i>≥72</i>	<i>Above Average</i>

Note: Adapted from Piers-Harris 2 Manual, Second Edition (PH-2, 2002, p. 17).

The domain scales in Table 9 represent specific areas within global self-concept and help to distinguish specific areas of strength or vulnerability (Piers, 2002, p.21). The study used the Piers-Harris 2 Children’s Self-Concept Scale to conduct an assessment of each student’s self-concept. A normalized T-score was constructed by converting a normalized raw score. The T-scores “have a mean of 50 and a standard deviation of 10” (Piers, 2002, p. 17). The TOT score represents general self-concept and is regarded as the single most reliable measure on the PH-2 scales and is well-supported by related research (PH-2, 2002).

Descriptive statistics (self-concept). To provide a basis for answering the research question 1, an investigation of the descriptive statistics on the self-concept variables was conducted. The mean t-score for all participants for TOT, INT, PHY, FRE, POP and HAP are all well within the average range of 45T to 55T, with the exception of BEH, which was slightly above average for both school groups. Table 10 shows the mean t-scores, the standard deviation and the total number of observed cases (N). The data reveals very small between-school differences; however, School #1 has a lower mean total self-concept score by three points. There was very little difference found in academic self-concept (INT, or Intellectual, School Status) between the two schools

(52.67 and 51.65), with School #1 reporting the highest academic self-concept. The greatest variances between the two schools were found in TOT, PHY, FRE and POP.

Table 10

Descriptive Statistics for Self-concept and its Subdomains

School		Mean	Std. Deviation	N
School #1	TOT	50.83	8.009	24
	BEH	56.96	6.656	24
	INT	52.67	8.176	24
	PHY	46.54	6.474	24
	FRE	48.17	7.878	24
	POP	46.58	9.079	24
	HAP	52.17	8.144	24
	School #2	TOT	53.30	8.388
BEH		55.98	8.351	57
INT		51.65	7.441	57
PHY		50.23	8.188	57
FRE		51.67	8.238	57
POP		49.89	7.355	57
HAP		52.14	6.749	57

Not included in Table 10 are the mitigating variables, INC (inconsistent responses) and RES (response bias). The INC index is measured on a 1 to 4 rating scale. The mean for *INC* (Inconsistent Responding) is less than one percent for both schools. This is quite low, considering the cutoff is 4 and above for being considered an unusually high number of inconsistent or random responses (Piers, 2002, p. 43). In contrast, *RES* (Response Bias) is considerably high in each instance. The cutoff scores are 18 and 40, with scores of 18 or less representing a negative response bias or lower than usual positive responses, and scores of 40 or higher indicative of a positive response bias or an unusually high rate of yes responses. It should be noted that the cutoff scores are considered “reasonably conservative” (Piers, 2002, p. 44) and moderate deviations should

not present a problem with interpretation. The mean *RES* score for both schools (at approximately 48) indicates that there were an unusually large number of *yes* responses. In both cases, the *RES* measured well above 40, which might indicate a higher inclination to agree with each item than normal. Since a certain degree of response bias was evident, some caution should be exercised in the interpretation of self-concept. In the final analysis of the descriptive statistics, to determine if there is a statistically significant relationship between self-concept and academic achievement, an investigation of Tables 11 and 12 was performed to identify any correlation between the dependent variables (SSELA and SSMath) and the independent variable self-concept and its subdomains.

Table 11

SI Correlations for Self-concept and ELA/Math Scaled Scores

Variables ²		TOT	BEH	INT	PHY	FRE	POP	HAP	SSELA	SSMath
TOT	Pearson Correlation	1	.730**	.828**	.849**	.803**	.865**	.584**	.161	.045
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.003	.473	.844
	N	24	24	24	24	24	24	24	22	22
BEH	Pearson Correlation	.730**	1	.669**	.499*	.421*	.503*	.459*	.401	.322
	Sig. (2-tailed)	.000		.000	.013	.041	.012	.024	.065	.144
	N	24	24	24	24	24	24	24	22	22
INT	Pearson Correlation	.828**	.669**	1	.648**	.583**	.706**	.207	.224	.140
	Sig. (2-tailed)	.000	.000		.001	.003	.000	.333	.317	.535
	N	24	24	24	24	24	24	24	22	22
PHY	Pearson Correlation	.849**	.499*	.648**	1	.580**	.759**	.603**	.203	.051
	Sig. (2-tailed)	.000	.013	.001		.003	.000	.002	.366	.820
	N	24	24	24	24	24	24	24	22	22
FRE	Pearson Correlation	.803**	.421*	.583**	.580**	1	.619**	.552**	-.213	-.184
	Sig. (2-tailed)	.000	.041	.003	.003		.001	.005	.341	.412
	N	24	24	24	24	24	24	24	22	22
POP	Pearson Correlation	.865**	.503*	.706**	.759**	.619**	1	.318	.095	-.052
	Sig. (2-tailed)	.000	.012	.000	.000	.001		.130	.673	.817
	N	24	24	24	24	24	24	24	22	22
HAP	Pearson Correlation	.584**	.459*	.207	.603**	.552**	.318	1	.100	.076
	Sig. (2-tailed)	.003	.024	.333	.002	.005	.130		.658	.738
	N	24	24	24	24	24	24	24	22	22
SSELA	Pearson Correlation	.161	.401	.224	.203	-.213	.095	.100	1	.823**
	Sig. (2-tailed)	.473	.065	.317	.366	.341	.673	.658		.000
	N	22	22	22	22	22	22	22	22	22
SSMath	Pearson Correlation	.045	.322	.140	.051	-.184	-.052	.076	.823**	1
	Sig. (2-tailed)	.844	.144	.535	.820	.412	.817	.738	.000	
	N	22	22	22	22	22	22	22	22	22

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

a. School = School #1

²Variable Descriptors - Total Self-Concept (TOT), Behavioral Adjustment (BEH), Intellectual/School Status (INT), Physical Appearance/Attributes (PHY), Freedom From Anxiety (FRE), Popularity (POP), Happiness/Satisfaction (HAP)

Table 12

S2 Correlations for Self-concepts and ELA/Math Scaled Scores

Variables ³	TOT	BEH	INT	PHY	FRE	POP	HAP	SSELA	SSMath	
TOT	Pearson Correlation	1	-.016	.019	.100	-.014	-.179	.038	.112	.001
	Sig. (2-tailed)		.903	.891	.460	.920	.184	.781	.418	.992
	N	57	57	57	57	57	57	57	54	54
BEH	Pearson Correlation	-.016	1	.540**	.260	.300*	.078	.417**	.173	.230
	Sig. (2-tailed)	.903		.000	.051	.024	.562	.001	.212	.094
	N	57	57	57	57	57	57	57	54	54
INT	Pearson Correlation	.019	.540**	1	.567**	.517**	.326*	.458**	.141	.207
	Sig. (2-tailed)	.891	.000		.000	.000	.013	.000	.308	.132
	N	57	57	57	57	57	57	57	54	54
PHY	Pearson Correlation	.100	.260	.567**	1	.472**	.605**	.471**	-.192	.005
	Sig. (2-tailed)	.460	.051	.000		.000	.000	.000	.164	.971
	N	57	57	57	57	57	57	57	54	54
FRE	Pearson Correlation	-.014	.300*	.517**	.472**	1	.448**	.364**	.197	.156
	Sig. (2-tailed)	.920	.024	.000	.000		.000	.005	.154	.261
	N	57	57	57	57	57	57	57	54	54
POP	Pearson Correlation	-.179	.078	.326*	.605**	.448**	1	.338*	-.285*	-.271*
	Sig. (2-tailed)	.184	.562	.013	.000	.000		.010	.037	.047
	N	57	57	57	57	57	57	57	54	54
HAP	Pearson Correlation	.038	.417**	.458**	.471**	.364**	.338*	1	-.067	.031
	Sig. (2-tailed)	.781	.001	.000	.000	.005	.010		.632	.825
	N	57	57	57	57	57	57	57	54	54
SSELA	Pearson Correlation	.112	.173	.141	-.192	.197	-.285*	-.067	1	.750**
	Sig. (2-tailed)	.418	.212	.308	.164	.154	.037	.632		.000
	N	54	54	54	54	54	54	54	54	54
SSMath	Pearson Correlation	.001	.230	.207	.005	.156	-.271*	.031	.750**	1
	Sig. (2-tailed)	.992	.094	.132	.971	.261	.047	.825	.000	
	N	54	54	54	54	54	54	54	54	54

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

a. School = School #2

³Variable Descriptors - Total Self-Concept (TOT), Behavioral Adjustment (BEH), Intellectual/School Status (INT), Physical Appearance/Attributes (PHY), Freedom From Anxiety (FRE), Popularity (POP), Happiness/Satisfaction (HAP), ELA Scaled Scores (SSELA), and Mathematics Scaled Scores (SSMath)

The first number to appear in the table on the first line is the Pearson r . An r calculation of 1.0 indicates that the variable pair is perfectly correlated. This would be the case when a variable is paired with itself. The second number that appears on the second line reports the significance level or p value (*Sig.*) which tells us the probability that the r calculation could have resulted by chance. This study used the p value of .05 to determine significance levels. Any p value that is less than .05 indicates that there is a statistically significant correlation between the variables.

Table 11 shows there is no statistically significant correlation between the dependent variable SSELA and the independent variables representing self-concept for School #1; however, since the p value for BEH was .065, slightly higher than the .05 adopted p value, and since response bias is a factor, this variable will be included in further analysis. In addition, while there was no statistically significant correlation between FRE and SSELA for School #1, there was a negative correlation and further examination may reveal more insightful data. For School #2, Table 12 shows a negative correlation and statistically significant relationship between both dependent variables SSELA and SSMath and the independent variable POP. In order to draw further meaning from these associations, this study examined total self-concept (TOT) and intellectual and school status (INT) as research has found that there is a relationship between perceived intellectual and school status and academic achievement (Guay et al., 1999; Marsh & Hau, 1999). The correlated variables, popularity (POP) and freedom from anxiety (FRE) were explored to determine their statistical significance in the relationship with self-concept. Finally, the independent variable, behavior (BEH), was included as both schools' participant groups showed higher than average t-scores for this

variable. Box plots showing a comparison of the mean scaled scores for the self-concept variables were produced from the descriptive statistical data and the analysis provided additional insights. As stated in an earlier section, the mean t-score for total self-concept for each school was average, and the between-school differences were minimal. All participants showed average self-concept (T-scores ranging from 45t to 55t) with the exception of participants assigned to Teacher #7 (T7) at School #2, whose mean T-score was slightly above-average. There was a wide discrepancy in the TOT T-scores between School #1's classroom groups. T2 participants (the lower performing classroom group) had the highest intellectual/school status mean t-score. This result supports the BFLPE in that students assigned to schools or classrooms with lower school or classroom-average achievement tend to portray higher academic self-concept (Marsh & Hau, 2003). While both had average scores, there was an 8 point difference with T2's participants having the higher T-score.

An investigation of Figures 7 and 8 provided a means for comparing self-concept for each school's classroom groups, as well as a tool for making between-school comparisons.

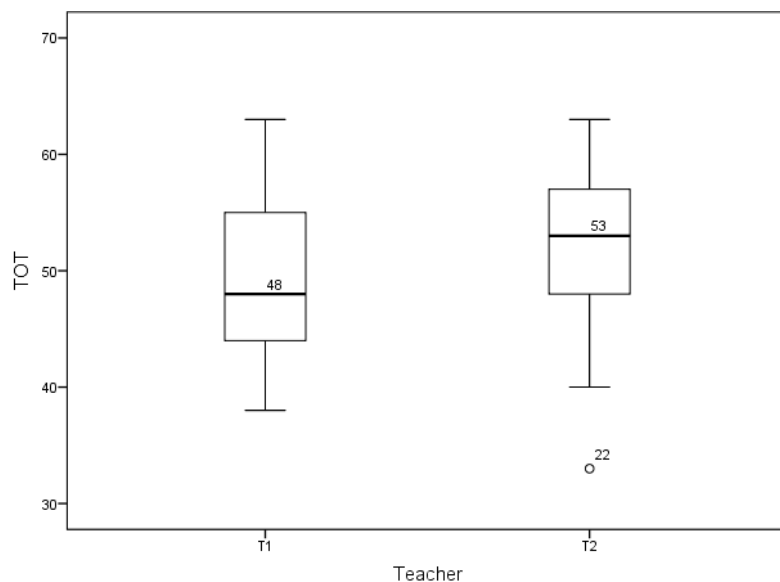


Figure 7. S1 - Mean comparison of TOT t-Scores by teacher.

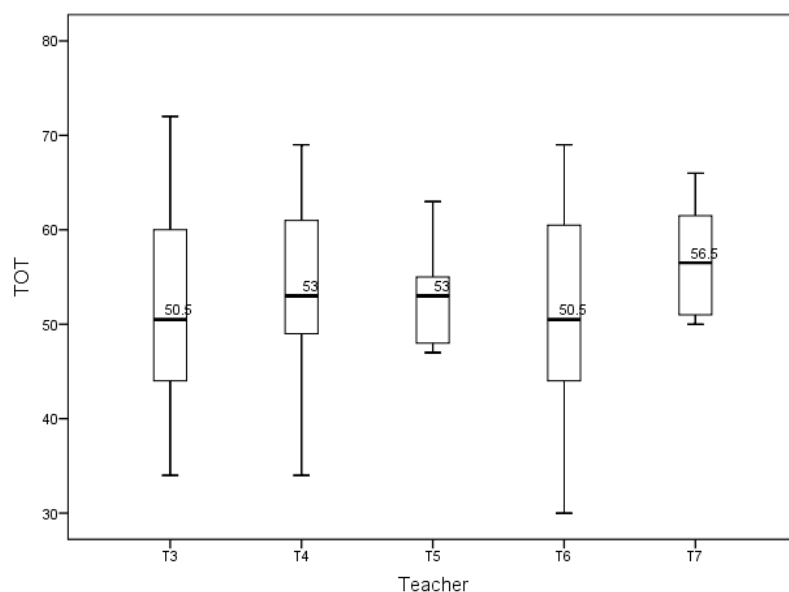


Figure 8. S2 – Means comparison of TOT t-Scores by teacher.

Within-school differences. Next, this study considered intellectual and school status (INT) as an important variable based on prior research. The representative items for INT are based on statements such as, “I am good in my schoolwork”, and “My classmates think I have good ideas”. This study found that for S1, among ELA and Math performance level groups, the “proficient” group had the highest mean INT score. This

result is consistent with studies that advance the notion that high achievement is linked with higher academic self-concept (Guay et al., 1999; Marsh & O'Mara, 2008). Being that in S1, a greater number of proficient students tended to be assigned to T1, this result suggests that higher-achieving students' self-concept is best when the comparison reference is based on other high achievers which is in line with the theory that these students may "bask in the glory" of their peer's achievement (Marsh et al., 2000).

Between-school differences. S1's mean INT score was above-average and similar to the higher-achieving S2. The results are consistent with BFLPE theory (Marsh & Hau, 2003) which posits that students in a lower-performing school environment tend to have higher academic self-concept. Ironically, the "below-basic" and "advanced" groups had the same or very similar mean T-score (high-average), an indication that in spite of "below-basic" group's low performance, a substantial number of participants in this group possess a very strong self-regard of their academic abilities. This finding provides additional support for the BFLPE theory espoused by Marsh & Hau (2003).

Figures 9 through 12, below, depict the variations in the mean INT scale scores in math and ELA for both schools by performance level group:

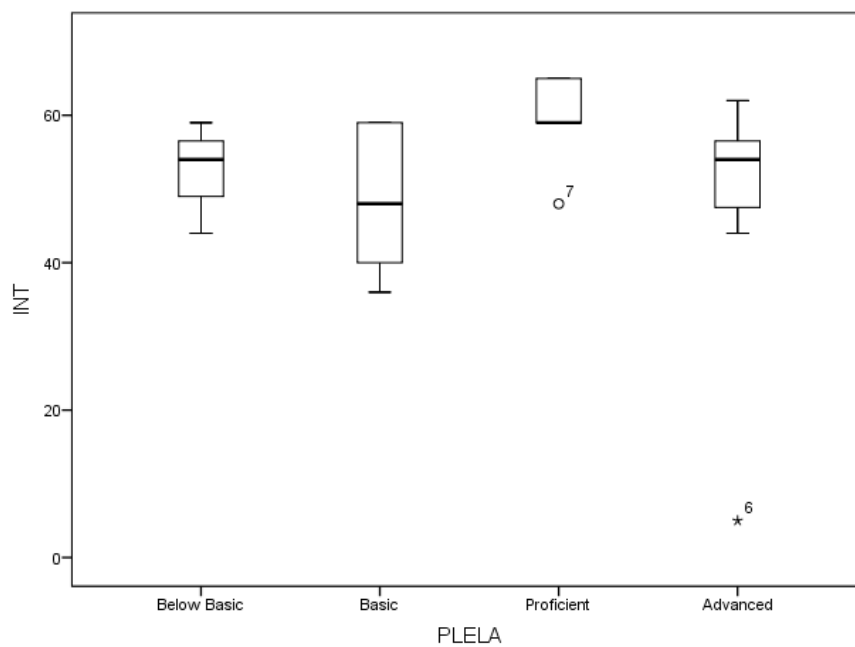


Figure 9. S1 - Means comparison of INT t-scores by PLELA.

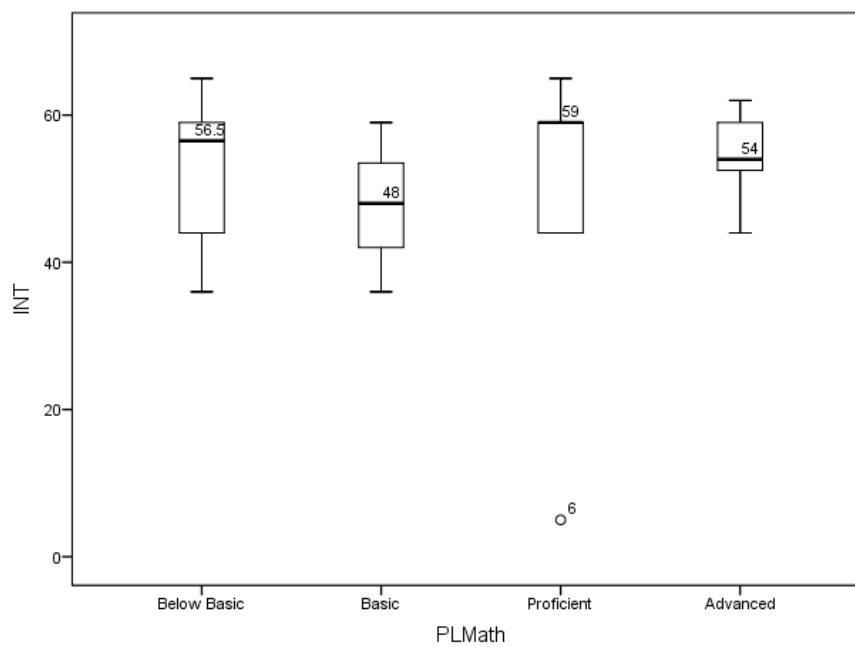


Figure 10. S1- Means comparison of INT t-scores by PLMath.

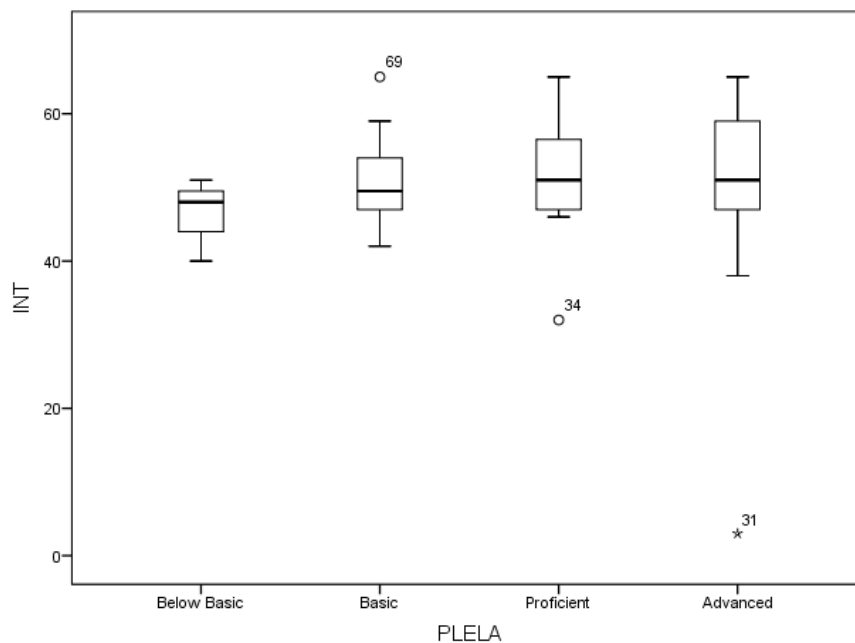


Figure 11. S2 - Means comparison of academic self-concept (INT) by PLELA.

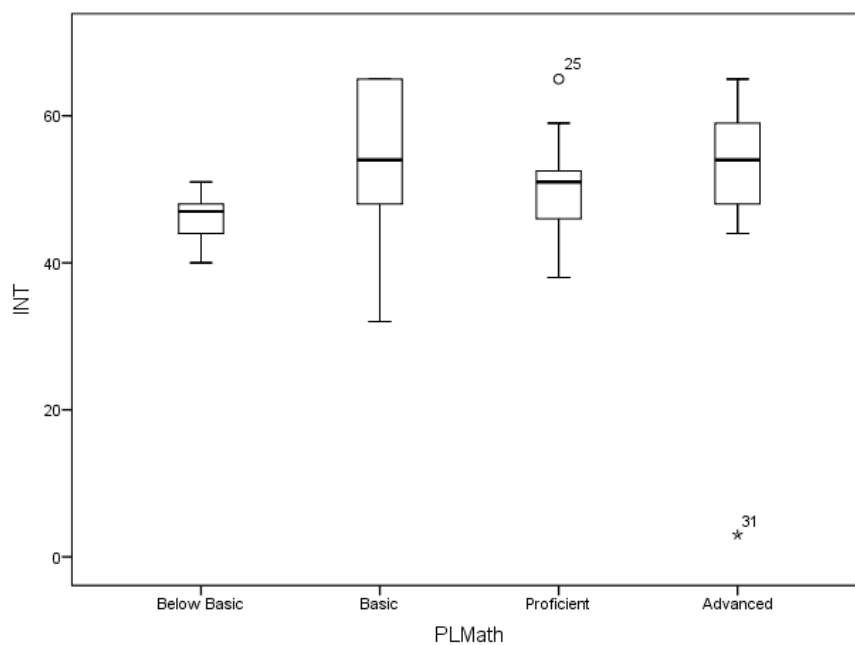


Figure 5. S2 - Means comparison of academic self-concept (INT) by PLMath.

While the correlation table presented earlier (Table 7) portrayed no statistically significant correlation between the achievement variables and behavior for School #1

(S1), this study included BEH as an exploratory factor as the p value for BEH in relation to SSELA exceeded the adopted value of .05 by a small margin. As depicted in Figure 13, “below-basic” and “basic” level performers have the lower self-appraisal of behavioral adjustment. In contrast, the “proficient” and “advanced” participants’ self-perceived behavioral adjustment is very high. Figure 13 illustrates the disparity between perspectives with respect to BEH for S1’s ELA performance-level groups:

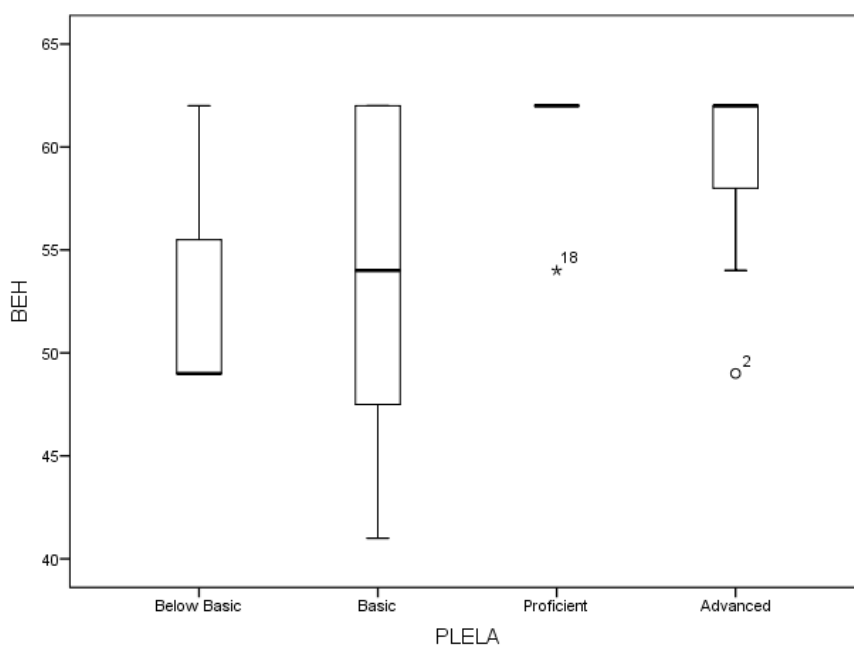


Figure 13. S1- Means comparison of BEH t-scores by PLELA.

The next self-concept variable studied was *freedom from anxiety* (FRE), as this was the negatively correlated variable for S1 in both ELA and Math. Again, the mean T-score for FRE was considered average for all classroom groups; however, this study noted substantial within-school differences. For School #1, an eight point disparity between the two teachers with T2’s group reporting higher levels of freedom from anxiety. For School #2, the widest difference was a seven point gap between T6 and T7 participants’ mean T-score.

A review of Figures 14 and 15 afforded the best opportunity to explore the relationship between achievement and levels of anxiety for S1.

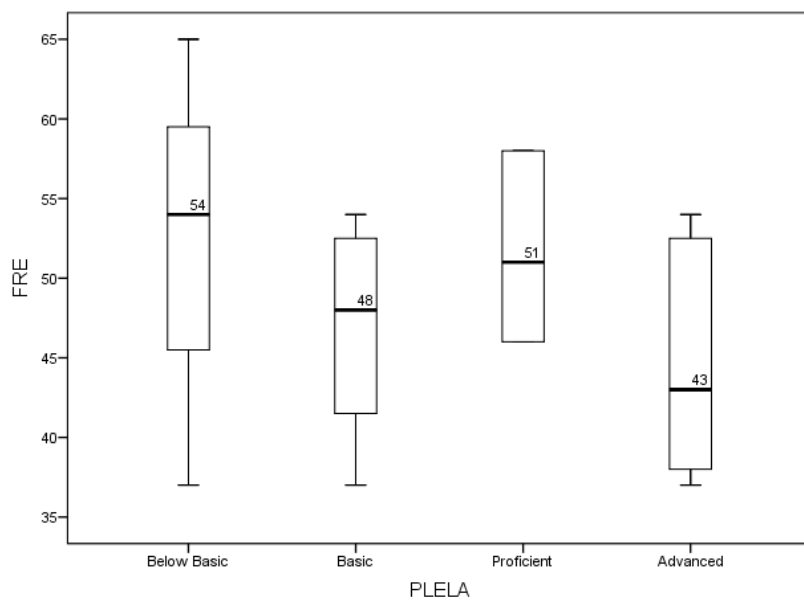


Figure 14. S1 - Comparison of FRE mean t-scores by PLELA.

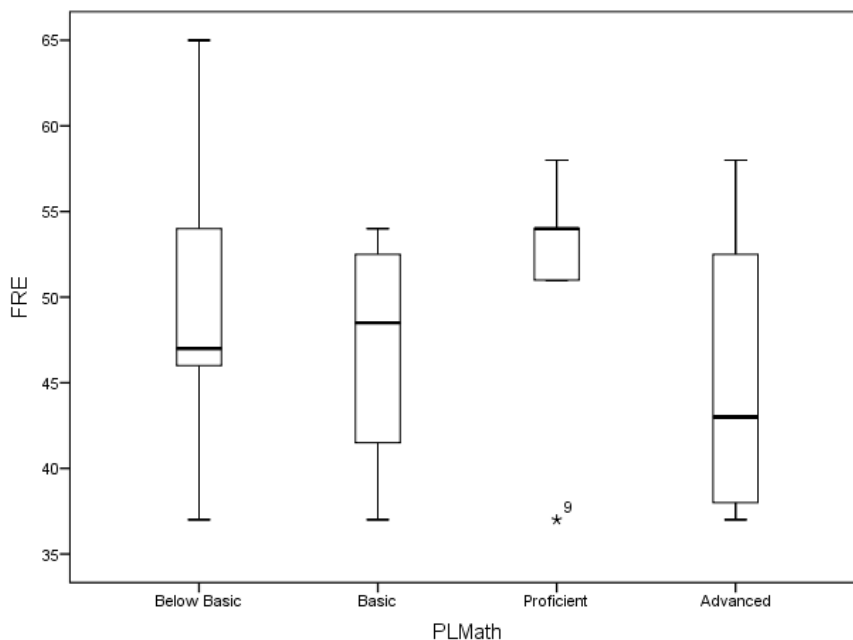


Figure 15. S1- Means comparison of FRE t-scores by PLMath.

The next step in probing for similarities or differences in self-concept consisted of a review of self-reports of *popularity* (POP), the correlated variable for S2. Each group had an average mean T-score; however, once again, the below-basic grouping ELA and Math reported the highest mean POP score. In both subjects, there were a few outliers on both extremes of the scale.

A review of Figures 16 and 17, below, offered the best perspective on similarities or differences in POP between and within school groups.

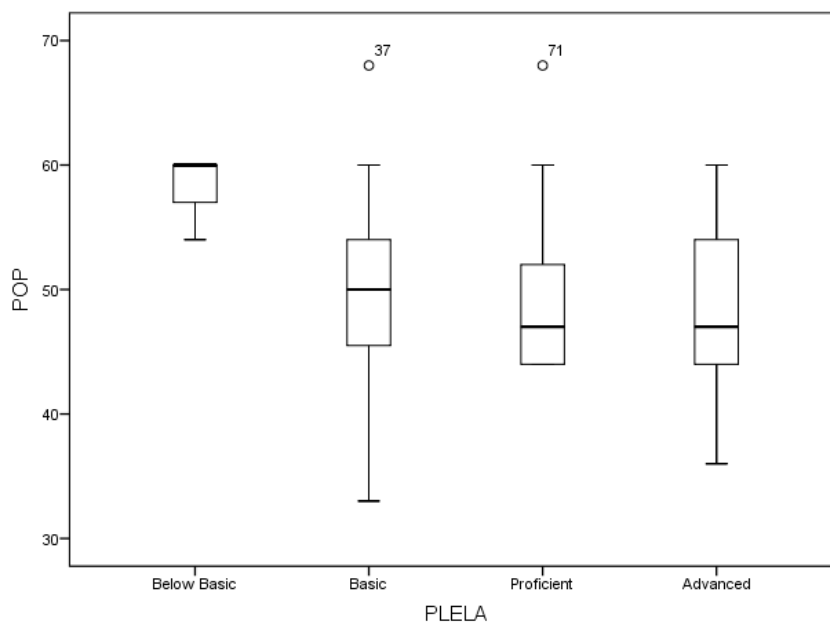


Figure 16. Means comparison of ELA performance and POP t-scores.

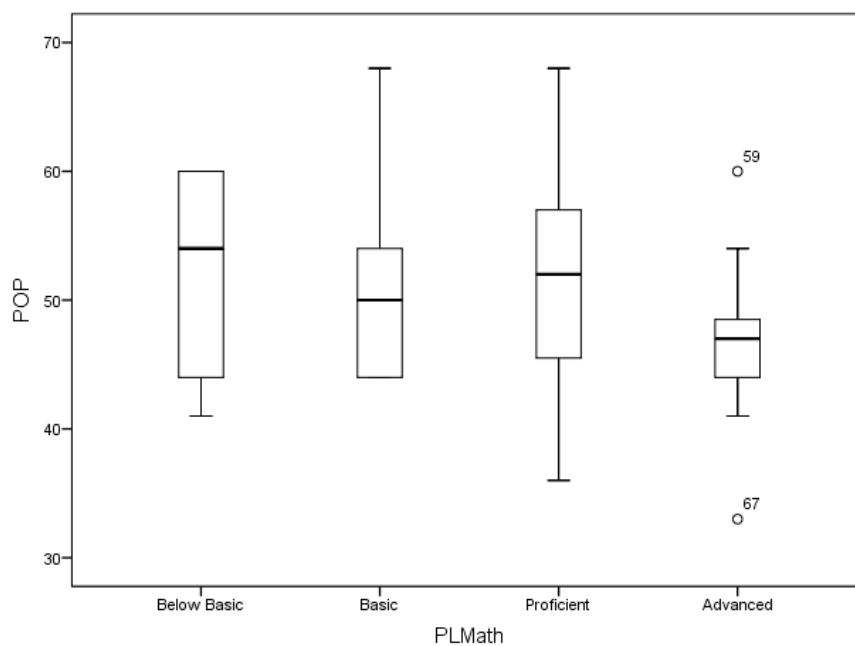


Figure 17. Means comparison of math performance and POP t-scores.

As mentioned in the previous section, School #1 showed no statistically significant correlations between SSELA and self-concept; however, INT, BEH FRE and

POP were deemed variables that warranted further investigation and were, therefore, included in the inferential statistical analysis. For School #2, a regression analysis was calculated using a stepwise method (including only statistically significant variables). The output resulted in a model summary (Table 13) that eliminated School #1, indicating that there was no statistically significant relationships between self-concept and ELA achievement for the school's participants. Additionally, INT was eliminated as a result of the linear regression calculations as a statistically significant factor. The final regression analysis portrayed the total variance in SSELA that can be explained by the independent variables FRE and POP for School #2.

Between-school differences. As indicated by the model summary presented in Table 13, the independent variables, INT, BEH, FRE and POP produced a sound model for both schools. For School #1, Model 1, the variables are highly correlated with SSELA (r value of .689), and the r square value indicated that variations in ELA scaled scores could be explained by the variables included in the model in nearly 48% of the observed cases. Model 1 for School #2 shows a high correlation between the variables, as well, with a high-moderate correlation (r value, .454) and an r square that indicates 44 percent of the variance in SSELA can be explained by the combination of variables included in this model.

Table 13

Linear Regression Model Summary for Goodness of Fit

School	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
School #1	1	.689 ^a	.475	.351	35.538
School #2	1	.454 ^a	.206	.142	45.396

a. Independent variables: (Constant), INT, POP, BEH, FRE

b. Dependent variable: ELA

The next step in the data analysis process was the investigation of the analysis of variance between the means. Table 14 is an ANOVA calculation produced from the regression analysis that provided an additional test of the model fit. As presented in Table 14, the ANOVA calculation shows a high statistical significance in the relationship between ELA scaled scores and the independent variables BEH, INT, POP and FRE. The p values (*Sig.*, .021 and .021) substantiated the fitness of the chosen model.

Table 14

ANOVA Test of Assumptions for SSELA and BEH, INT, POP and FRE

School	Model		Sum of Squares	df	Mean Square	F	Sig.
School #1	1	Regression	19416.368	4	4854.092	3.843	.021 ^b
		Residual	21470.404	17	1262.965		
		Total	40886.773	21			
School #2	1	Regression	26258.082	4	6564.521	3.185	.021 ^b
		Residual	100979.251	49	2060.801		
		Total	127237.333	53			

a. Dependent Variable: SSELA

b. Independent Variables: (Constant), INT, POP, BEH, FRE

To determine the extent of each variable's impact, an examination of data produced and presented in a correlation coefficients table (Table 15) provided a more detailed perspective of each variable's impact.

Table 15

Correlation Coefficients Test of Assumptions

School	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
School #1	1	(Constant)	299.618	71.492		4.191	.001
		BEH	3.424	1.406	.531	2.435	.026
		FRE	-3.565	1.227	-.664	-2.906	.010
		POP	1.386	.802	.419	1.728	.102
		INT	-.631	.621	-.190	-1.016	.324
School #2	1	(Constant)	378.159	60.099		6.292	.000
		BEH	.688	.847	.119	.813	.420
		FRE	2.145	.906	.352	2.369	.022
		POP	-2.786	.954	-.414	-2.922	.005
		INT	-.284	.766	-.057	-.371	.712

a. Dependent Variable: SSELA

An examination of the correlation coefficients table (Table 15) illuminated the relationship between the independent variables, BEH, POP and FRE, and the dependent variable, SSELA. The calculation of the correlation coefficients resulted in the exclusion of POP (.102) and INT (.324) as a statistically significant predictor variable for School #1, leaving BEH and FRE as the most statistically significant. For School #2, BEH (.420) and INT (.712) showed no statistically significant relationship, leaving only POP and FRE as having a high statistical significance. For the final step in the data collection process for Research Question One, another linear regression analysis was performed, using mathematics scaled scores as the dependent variable and the same independent variables. The results are depicted in a model summary, ANOVA table, and a correlation coefficients table (Table 16) provided a test of the assumptions.

The model summary portrayed what appeared to be a sound model for surveying the statistical significance between Math scaled scores and the same independent

variables (INT, BEH, FRE and POP) for both schools; however, the correlation, represented by the r Square, was diminished from 26% to 9% for School #1. For School #2, the model maintained its fidelity. This study's investigation of Table 16, below, focused on the correlation coefficient (r value), R Square (effect) and Adjusted R Square (adjustment for effect size).

Table 16

Model Summary of Math Scaled Scores and SC Variables

School	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
School #1	1	.510 ^a	.260	.086	66.097
School #2	1	.434 ^a	.188	.122	66.263

a. Dependent Variable: Math Scaled Scores (SSMath)

b. Independent Variables: (Constant), INT, POP, BEH, FRE

* SC = Self-concept

Further examination of the model was conducted using an ANOVA test which proved that this model, using the predictors BEH, INT, FRE and POP to forecast Math scaled scores, was not a good fit for School #1, as the p value of .248 was substantially higher than this study's adopted .05 p value. The same model proves to be valid for S2.

Table 17

ANOVA Test of Assumptions for SSMath and SC

School	Model	Sum of Squares	df	Mean Square	F	Sig.
School #1	Regression	26113.574	4	6528.394	1.494	.248 ^b
	Residual	74269.199	17	4368.776		
	Total	100382.773	21			
School #2	Regression	49945.590	4	12486.397	2.844	.034 ^b
	Residual	215148.336	49	4390.782		
	Total	265093.926	53			

a. Dependent Variable: SSMath

c. Independent Variables: (Constant), INT, POP, BEH, FRE

(* SC = Self-concept)

Finally, an inspection of the correlation coefficients table (Table 18) for School #2's data reaffirmed the statistical significance of the independent variable POP as a correlate to mathematics scaled scores for S2. In addition to being statistically significant, the variable POP was negatively correlated with math scaled scores, indicating as math scores increase, self-appraisals of popularity decreases.

Table 18

Correlation Coefficients for SSMath and SC Variables

School	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
School #1	(Constant)	270.923	128.723		2.105	.050
	BEH	4.288	2.451	.425	1.750	.097
	POP	1.160	1.449	.224	.801	.434
	FRE	-4.282	2.208	-.509	-1.939	.068
School #2	(Constant)	367.398	87.062		4.220	.000
	BEH	1.456	1.115	.174	1.305	.198
	POP	-3.709	1.357	-.382	-2.733	.009
	FRE	2.289	1.276	.260	1.794	.079

a. Dependent Variable: SSMath

(* SC = Self-concept)

Summary

In general, both schools met the target proficiency in ELA and math; however, S2's participants' school-average achievement exceeds that of S1's participants by approximately 20 points in both subject areas. This study found very few between-school differences in school-average achievement with respect to subgroups. Teacher and ethnicity were determined highly significant as predictors of ELA and Mathematics scaled scores for both schools. Gender was determined to be insignificant in all but one instance. The relationship between gender and Math scaled scores for S1's participants

was found to be statistically significant. A statistically significant relationship was found between ethnicity and both dependent variables, ELA and mathematics, for each school. Finally, no remarkable between-school differences were identified for total self-concept and any of the subdomains and each school's mean t-scores were quite similar.

This study found vast within-school differences in classroom-average achievement in both ELA and Mathematics scaled scores. Contrary to some very prominent research findings, this study found that there was no statistically significant relationship between academic self-concept (INT or intellectual and school status) and academic achievement. This outcome guided the focus on the other subdomains of self-concept. A calculation of the correlations paired each self-concept variable with one another, as well as with the two dependent variables, SSELA and SSMath. The correlations table (Table 11) showed no statistically significant correlations between the variables for School #1; however, the output produced data on BEH that prompted an interest in further examination. Table 12 produced highly significant correlations for School #2, between the achievement variables and POP and FRE.

A model was built using all three correlated variables (INT, BEH, FRE and POP) and a linear regression analysis was calculated. Both, the model summary and ANOVA calculations confirmed the fitness of the chosen model, and for both schools, a highly significant relationship was found in the relationship between achievement and the independent variables for each school. For School #1 this study found that BEH and FRE were reliable in explaining variations in ELA scaled scores with 96% and 99% confidence intervals. In contrast, no statistically significant relationship was found between mathematics scaled scores and the any of self-concept variables. For School #2,

POP and FRE were negatively correlated in addition to being statistically significant variables in the relationship with ELA. A negative correlation existed between mathematics scaled scores and POP for S2's participants, and a statistically significant relationship was found, as well. The analysis of data related to Research Question One, especially the significance of freedom from anxiety as a statistically significant variable for both schools, and popularity, a statistically significant and negatively correlated variable for S2, provided the impetus for analyzing the relationship between the social environment and self-concept.

Research Question Two

The second research question focused on the relationship between self-concept and social comparison. The investigation of comparison orientation was based on a sample of *n*24 participants from School #1 and *n*57 participants from School #2. The study used a modified version of the INCOM which includes the calculation of responses based on a Likert Scale whereby 1 = *Never*, 2 = *No*, 3 = *Sometimes*, 4 = *Yes*, and 5 = *Always*. The statements center on whether individuals compare their lives and personal situations to others, or have a tendency to consult with others to develop self-perceptions (Appendix D).

Comparison orientation data. As noted in an earlier section, the mean t-score for TOT was 50.83T for School #1 and 53.3T for School #2, both within the average range (45T to 55T) for children's self-concept. To explore the relationship between self-concept and comparison orientation (CO), the various categories of comparison orientation were examined. The mean score for comparison orientation was based on responses to the first 10 statements on the modified Iowa-Netherlands Comparison

Orientation Measure (INCOM). Questions 1 through 10 measured comparison orientation in general. The content of the questions is as follows:

1. I often compare how my friends and family do things to how other people do them.
2. I pay a lot of attention to how I do things compared to how other people do things.
3. To find out how well I have done something, I compare with how other people have done.
4. I compare myself to other people.
5. I like to compare my achievements with the achievements of other people.
6. I like to talk to other people about ways we are alike.
7. When I have a problem, I like to find out what other people think who have similar problems.
8. When making decisions, I like to know what others in the same situation as me would do.
9. If I want to learn more about something, I try to find out what others think about it.
10. I compare my life to the lives of other people.

The point scale ranged from 10 to 50 points and total scores were interpreted, as depicted in Table 19, as follows:

Table 19

Interpretation of Comparison Orientation Scaled Score Ranges

Score Range	Ranking
10 to 25	Low

26 to 30	Low-average
31 to 35	Average
36 to 40	High-average
41 to 50	High

Between-school differences. The mean comparison orientation scores were 29.17 for School #1 and 27.15 for School #2, both of which are just below the midpoint of the range (30), indicating that the participants possess a low-average comparison orientation. An examination of Figures 18 and 19 revealed between-school differences in the scaled scores for comparison orientation (CO), the standard deviation, as well as the number of cases observed.

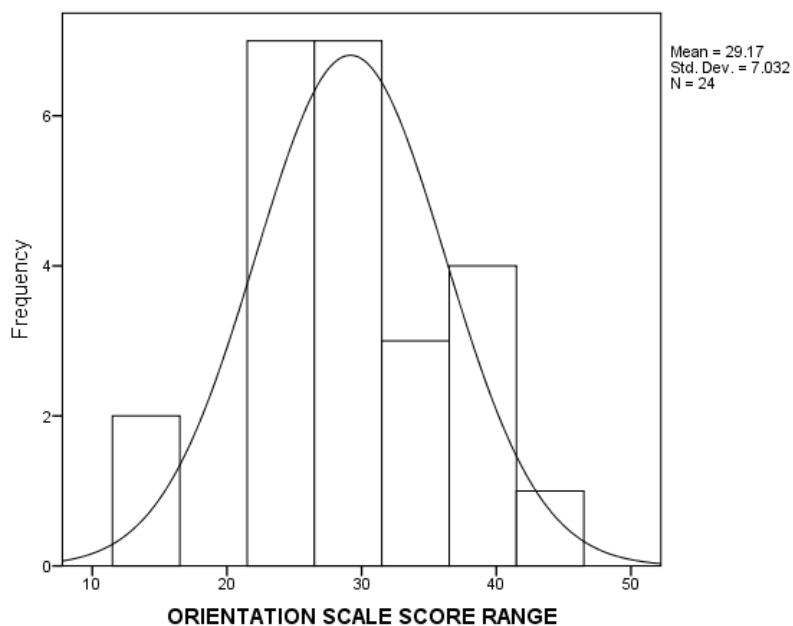


Figure 18. Descriptive statistics histogram based on general CO scaled scores.

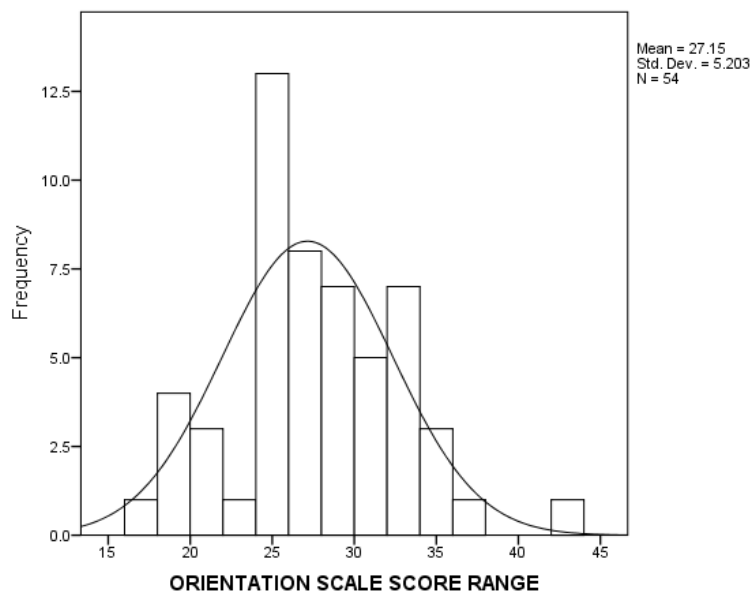


Figure 19. Descriptive statistics histogram based on general CO scaled scores.

Within-school differences. School #1's participants had a CO mean scaled score of that was higher by a minimal amount; however, since the number of cases observed is substantially lower, the higher value for School #1 generated further interest in determining if there were any within-school similarities or differences. Figure 20, below, shed light on a substantial within-school difference in comparison orientation of participants at School #1. The participants assigned to Teacher 1 (T1) have a mean scaled score that is positively skewed, indicating that more students are prone to making comparisons while T2's participants have a mean score that is negatively skewed, a sign that more students within this group are less prone to making comparative evaluations.

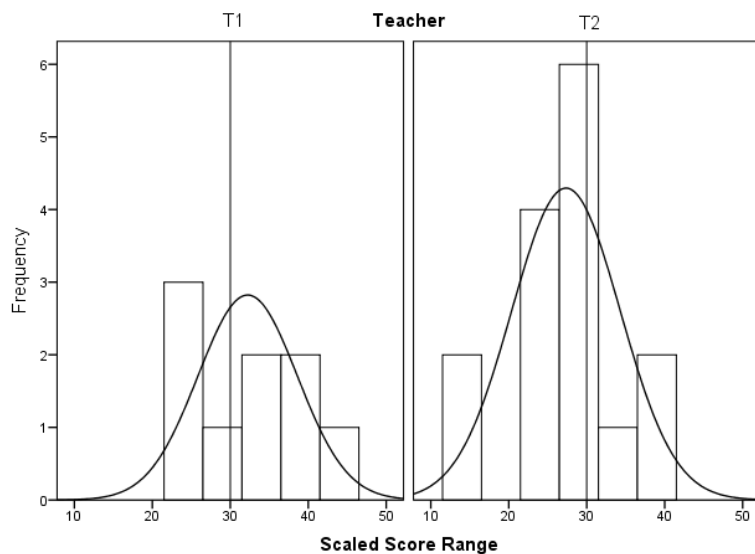


Figure 20. S1 - Descriptive statistics histogram of CO by teacher.

Within-school differences. There were no within-school differences in comparison orientation for the participants at School #2, as the mean score for all classroom groups was negatively skewed, indicating a lower inclination to engage in social comparison processes. Figure 21, below, illustrates these similarities.

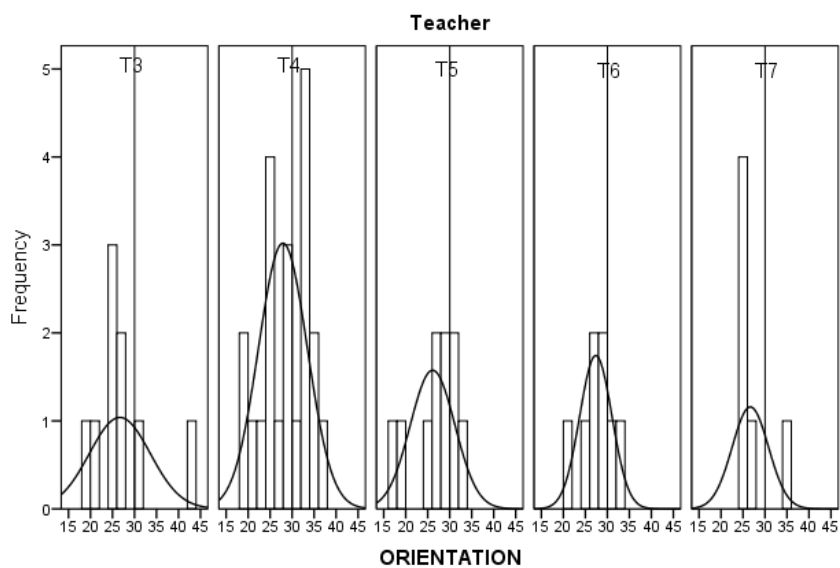


Figure 21. S2 - Descriptive statistics histogram of CO by teacher.

Upward/downward comparison data. To determine the specific nature of the type of comparison orientation that is characterized in participants' responses, this study explored upward and downward comparison orientation. An upward comparison orientation relates to an individual's tendency to compare him or herself to others whom she perceives to have superior characteristics. In contrast, a person possessing a downward comparison orientation tends to compare herself with individuals of lesser qualities or abilities. The point scale for each question that measured upward or downward orientation was from 1 to 5, with 1 representing *Never*, and 5 representing *Always*. Since there were two questions for each directional measure, the total score ranged from 2 to 10. For the purpose of this study, the scaled score ranges are depicted in Table 20, below, and were interpreted as follows:

Table 20

Interpretation of Upward and Downward Scale Measures

Score Range	Ranking
2 to 4	Low
5 to 6	Low-average
6 to 8	Average
8 to 10	High

The first step in examining the direction of comparison orientation was an investigation of responses to upward orientation. The scale for measuring upward orientation was represented by two questions on the modified INCOM, as follows:

11. I like to compare myself to people who have a better life.
12. To judge how well I do something, I compare myself to people who do it better.

In general, there was more similarity between schools with respect to upward orientation. Both schools' participants showed less than average tendency to compare themselves to individuals they perceive to have superior qualities. On a scale that ranged from 2 to 10, the mean upward orientation score for S1 and S2 (5.21 and 4.95, respectively) were both interpreted as low-average. The mean downward orientation scores were 4.21 (S1) and 3.32 (S2), both of which are considered low, according to the adopted interpretation scale. For each school, an overwhelming majority responded negatively to affirmative statements that they engage in downward comparison. While upward and downward orientation measures revealed low to low-average tendencies, there was an opposite effect for academic self-concept (INT). The data presented in Figures 22 and 23 illustrates the percent distribution of scaled scores for

intellectual/school status (academic self-concept) for both schools, and a majority of the participants provided higher than average positive self-appraisals.

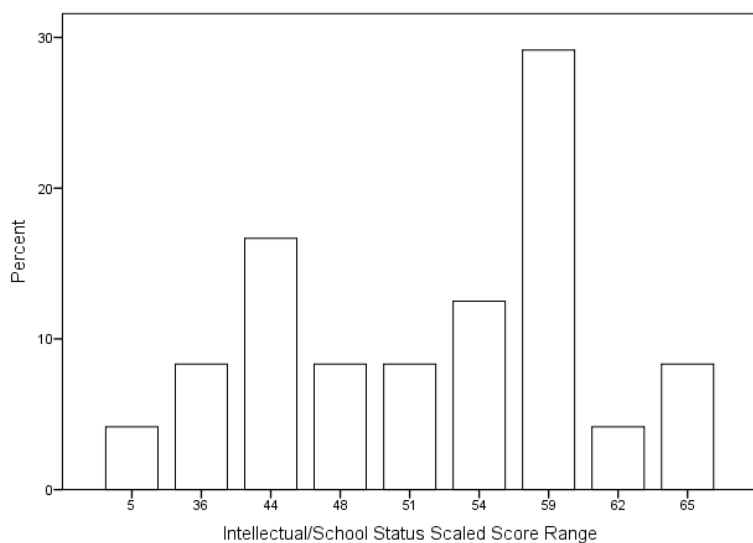


Figure 22. S1 - Histogram showing academic self-concept scores (INT).

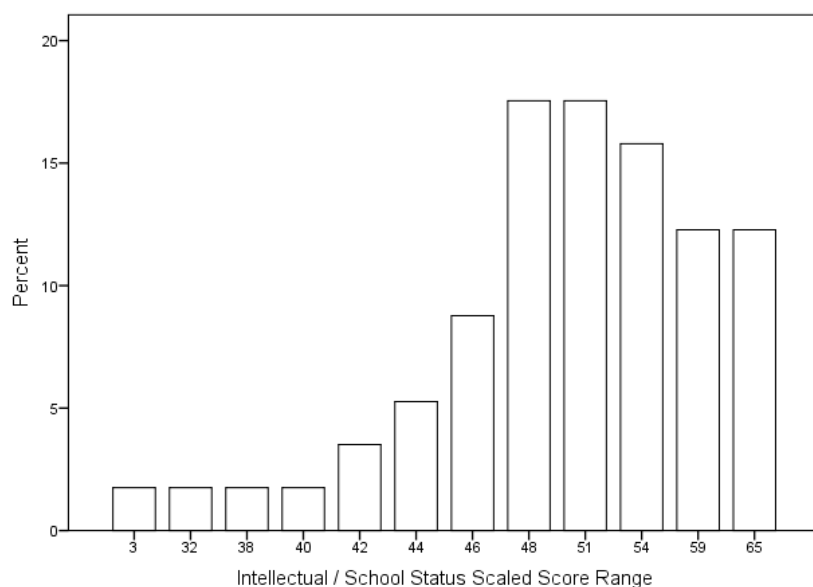


Figure 23. S2 – Histogram showing academic self-concept (INT) scores.

To determine the extent to which there is a statistically significant relationship between comparison orientation and self-concept, a correlations table was produced using all self-concept variables and comparison orientation with its component variables, upward and downward orientation, and the investigation found that total self-concept (TOT), freedom from anxiety (FRE) and comparison orientation (CO) were the only variables that were highly correlated. There was no statistically significant correlation found between comparison orientation and academic self-concept (INT); however, the Pearson Correlation Coefficient produced a negative correlation between academic self-concept and general comparison orientation ($r = -.134$), upward comparison ($r = -.113$) as well as downward comparison ($r = -.246$). This finding is consistent with BFLPE in that upward comparison has been found to produce negative effects (Marsh et al., 2008). An examination of the correlations table revealed a statistically significant correlation for both schools between the dependent variable comparison orientation (CO) and total self-concept (TOT) and freedom from anxiety (FRE), the independent variables. Additionally, the correlated variables showed a negative correlation, meaning that as comparison orientation increases, total self-concept and freedom from anxiety decreases. An investigation of Table 21 illustrates the statistical significance of the correlations between comparison orientation and the component variables of self-concept.

Table 21

Correlations between Comparison Orientation (CO) & SC Variables

School		TOT	INT	FRE	POP	CO	UPWARD	DOWNWARD	
Self-concept Variables					Comparison Orientation Variables				
School #1	TOT	Pearson Correlation	1	.300	.803**	.783*	-.453*	-.381	-.248
		Sig. (2-tailed)		.154	.000	.000	.026	.066	.244
		N	24	24	24	24	24	24	24
	INT	Pearson Correlation	.300	1	.219	.201	-.134	-.113	-.246
		Sig. (2-tailed)	.154		.304	.346	.531	.601	.246
		N	24	24	24	24	24	24	24
	FRE	Pearson Correlation	.803**	.219	1	.617*	-.639**	-.573**	-.358
		Sig. (2-tailed)	.000	.304		.001	.001	.003	.086
		N	24	24	24	24	24	24	24
	POP	Pearson Correlation	.783**	.201	.617**	1	-.143	-.250	-.016
		Sig. (2-tailed)	.000	.346	.001		.505	.240	.941
		N	24	24	24	24	24	24	24
CO	Pearson Correlation	-.453*	-.134	-.639**	-.143	1	.477*	.456*	
	Sig. (2-tailed)	.026	.531	.001	.505		.018	.025	
	N	24	24	24	24	24	24	24	
UPWARD	Pearson Correlation	-.381	-.113	-.573**	-.250	.477*	1	.307	
	Sig. (2-tailed)	.066	.601	.003	.240	.018		.144	
	N	24	24	24	24	24	24	24	
DOWNWARD	Pearson Correlation	-.248	-.246	-.358	-.016	.456*	.307	1	
	Sig. (2-tailed)	.244	.246	.086	.941	.025	.144		
	N	24	24	24	24	24	24	24	

(continued)

School		TOT	INT	FRE	POP	CO	UP	DOWN	
School #2	TOT	Pearson Correlation	1	.711**	.764**	.581*	-.284*	-.141	-.111
		Sig. (2-tailed)		.000	.000	.000	<u>.037</u>	.295	.410
		N	57	57	57	57	54	57	57
	INT	Pearson Correlation	.711**	1	.426**	.308*	-.146	-.109	-.015
		Sig. (2-tailed)	.000		.001	.020	.292	.420	.909
		N	57	57	57	57	54	57	57
	FRE	Pearson Correlation	.764**	.426**	1	.448*	-.284*	-.054	-.039
		Sig. (2-tailed)	.000	.001		.000	<u>.038</u>	.688	.774
		N	57	57	57	57	54	57	57
	POP	Pearson Correlation	.581**	.308*	.448**	1	-.205	-.191	-.023
		Sig. (2-tailed)	.000	.020	.000		.138	.155	.867
		N	57	57	57	57	54	57	57
	CO	Pearson Correlation	-.284*	-.146	-.284*	-.205	1	.491**	.578**
		Sig. (2-tailed)	<u>.037</u>	.292	.038	.138		.000	.000
		N	54	54	54	54	54	54	54
	UPWARD	Pearson Correlation	-.141	-.109	-.054	-.191	.491**	1	.456**
		Sig. (2-tailed)	.295	.420	.688	.155	.000		.000
		N	57	57	57	57	54	57	57
	DOWNWARD	Pearson Correlation	-.111	-.015	-.039	-.023	.578**	.456**	1
		Sig. (2-tailed)	.410	.909	.774	.867	.000	.000	
		N	57	57	57	57	54	57	57

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The next step involved inferential statistics and an examination of a regression analysis calculation using total self-concept (TOT), along with the domain FRE (also identified as significant variables in connection with achievement discussed in the first section of this chapter) as the independent variables, and CO as the dependent variable.

An examination of a model summary (Table 22) was conducted to evaluate the success of the selected model. The summary provided data indicating that for School #1's participants there was a very high correlation between CO and FRE, and that variances in comparison orientation could be explained by freedom from anxiety in forty percent of the observed cases. For S2, the relationship between CO and TOT showed a low to moderate correlation and TOT showed a much lower correlation of just eight percent based on the *r* Square of .08.

Table 22

Model Summary for CO with FRE and TOT as Independent Variables

School	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
School #1	1	.639 ^a	.408	.381	5.533
School #2	1	.284 ^b	.081	.063	5.036

a. Independent Variable, S1, Model 1: (Constant), FRE

b. Independent Variable, S2, Model 1: (Constant), TOT

To further validate the model, an analysis of variance was calculated. School #1's Model 1 (CO => FRE) was determined to be a good model as freedom from anxiety was reliable in explaining variances in comparison orientation with ninety-nine percent confidence. Likewise, Model 1(CO => TOT) for S2 produced a result whereby comparison orientation could be explained by variances in total self-concept with ninety-seven percent confidence (see Table 23).

Table 23

ANOVA to Determine Model Fit for CO with FRE and TOT

School	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	463.839	1	463.839	15.152	.001 ^b
School #1	1 Residual	673.494	22	30.613		
	Total	1137.333	23			
	Regression	116.108	1	116.108	4.578	.037 ^c
School #2	1 Residual	1318.707	52	25.360		
	Total	1434.815	53			

a. Dependent Variable: COMPARISON ORIENTATION (CO)

b. Predictors: (Constant), FRE

c. Predictors: (Constant), TOT

To explore the significance of these relationships, a calculation of the correlation coefficients (Table 24) provided the final test of the assumptions. This investigation substantiated the statistical significance between the variables for both models and highlighted a negative correlation, meaning that as CO increases, freedom from anxiety (S1) or total self-concept (S2) decreases.

Table 24

Coefficients Test of Assumptions for CO with FRE & TOT

School	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
School #1	1 (Constant)	56.625	7.144		7.926	.000
	FRE	-.570	.146	-.639	-3.892	.001
School #2	1 (Constant)	36.422	4.388		8.301	.000
	TOT	-.174	.081	-.284	-2.140	.037

a. Dependent Variable: ORIENTATION

Summary

Question Two explored the relationship between comparison orientation (CO) and the various domains of self-concept. The data collected provided a number of insights. The first finding was that the mean scores for CO fell within the average range and there was very little variance, in general, among the participants. The findings did result in between-school differences with School #1's participants showing a slightly higher tendency for social comparison than did School #2, albeit, by a small margin. Both schools had a mean CO score that was slightly lower than average. Additionally, a within-school difference was noted as School #1's classroom groups differed in social comparison orientation by a substantial amount. The students assigned to T1 had a tendency to engage in social comparison at a much higher rate than did the students assigned to T2. It should be noted that T1 participants demonstrated substantially higher performance in each subject.

Notwithstanding the aforementioned differences, this aspect of the study resulted in two key findings: (a) upward and downward comparison orientation between and within school groups was relatively low, and; (b) reports of academic self-concept were high, in comparison. These results were quite intriguing. A new question emerges with respect to what processes these participants are utilizing to calibrate self-opinions, and whether or not the participants reject the notion of making comparative evaluations to avoid a contrastive effect consistent with the Small-fish-big-pond-effect or SFBPE (Marsh, Kong & Hau, 2000; Suls & Wheeler, 2000) which suggests that individuals who attend high performing schools tend to develop lower academic self-concept. Inferential statistics revealed a statistically significant relationship between comparison orientation

and freedom from anxiety for School #1, as well as between comparison orientation and total self-concept for School #2. The final section of this chapter addresses Question Three and its focus on the relationship between *comparison orientation* (CO) and *academic achievement* (PLELA/PLMath).

Research Question Three

The third and final research question explored the relationship between academic achievement (PLELA and PLMath) as dependent variables, and comparison orientation with its subparts (upward and downward comparison) as independent variables. This section is divided into three parts. First, descriptive statistics provided a clear perspective of the relationship between academic achievement and comparison orientation by comparison of the means for comparison orientation between the performance level groups, Below Basic, Basic, Proficient, and Advanced for each subject matter. Next, inferential statistics using a Chi-square calculation provided the means for further analysis and is followed by a summary that synthesizes the findings. The first section explores similarities and differences in comparison orientation by groups according to subject matter performance.

Between-school differences. An investigation of Figures 24 and 25 revealed very distinct within-school differences in comparison orientation for School #1's performance level groups. Students performing at the below basic level in ELA showed extremely low levels of upward comparison orientation, an indication that the response item, *Never*, was the predominant choice for answering the above questions.

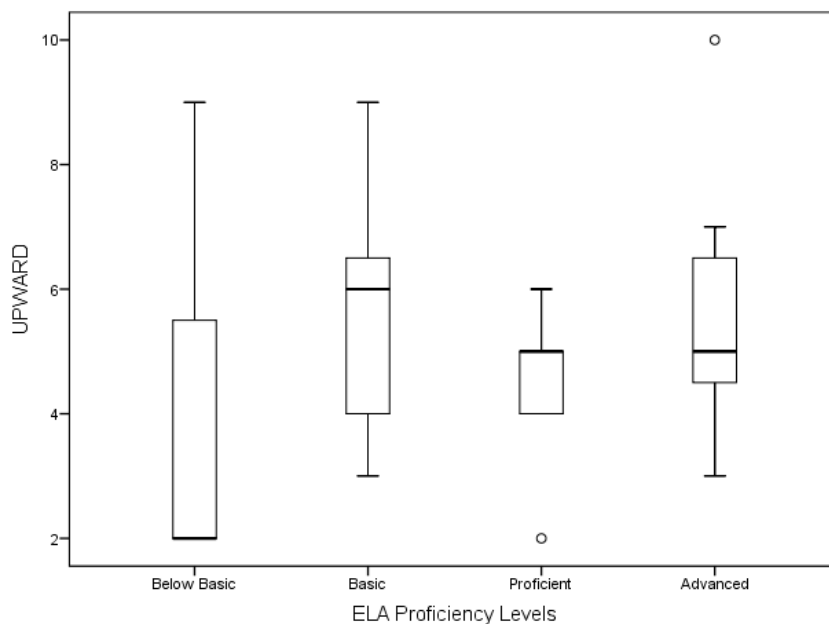


Figure 24. S1 – Mean upward comparison scaled score by PLELA.

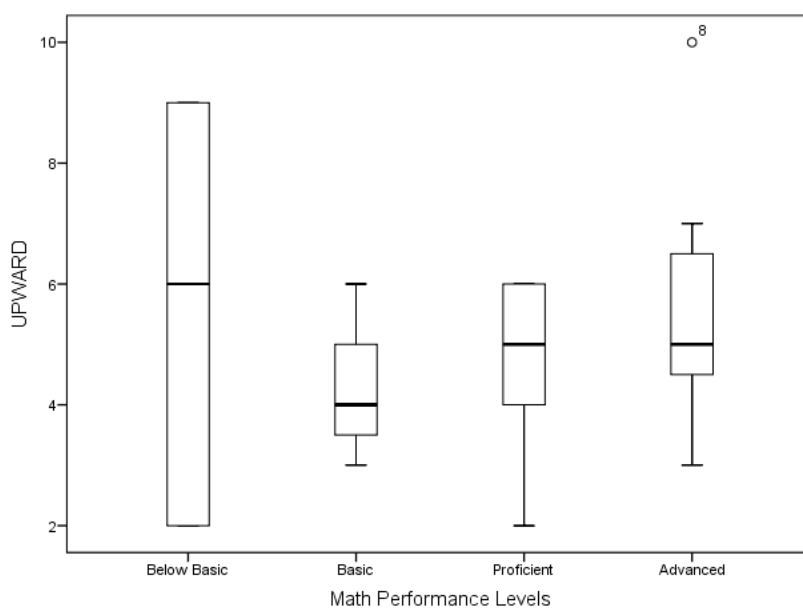


Figure 25. S1 – Mean upward comparison scaled score by PLMath.

As mentioned in an earlier section, School #2's participant groups demonstrated low-average upward comparison orientation, as depicted in Figures 26 and 27. In stark contrast to School #1's results, School #2's participants classified as *below-basic* in ELA demonstrated upward comparison orientation higher than all but one of the participant

groups classified at higher performance levels. In math, the *basic* performers demonstrated the greatest inclination to engage in upward comparison.

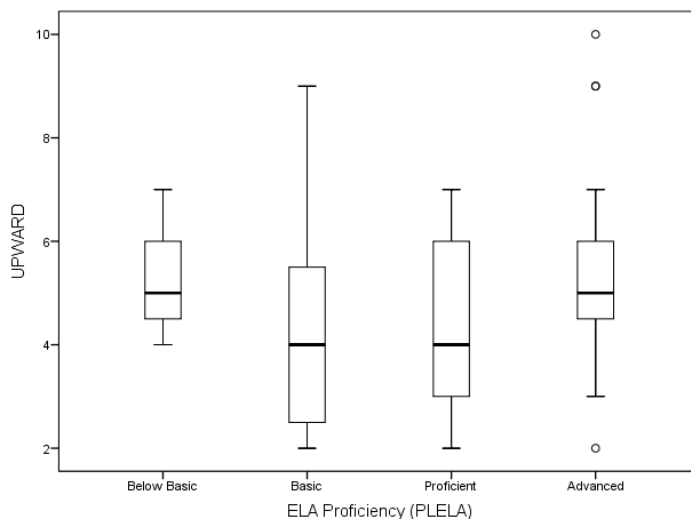


Figure 26. S2 - Mean upward comparison scaled scores by PLELA.

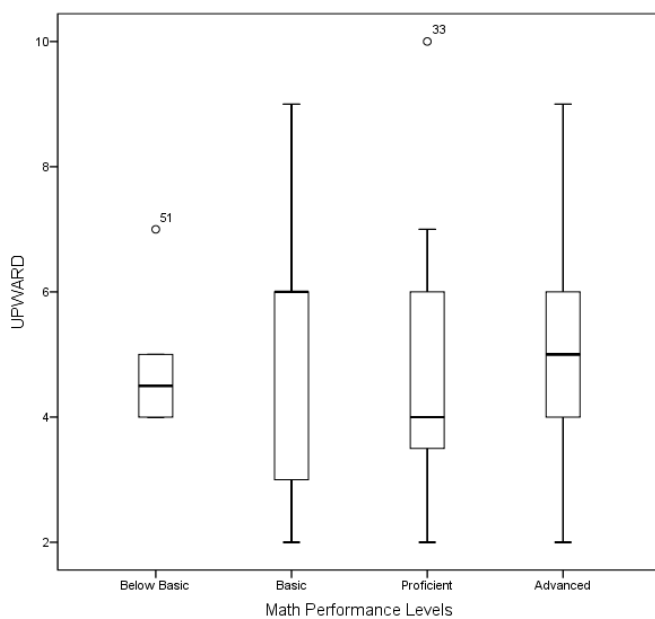


Figure 27. S2- Mean upward comparison scaled scores by PLMath.

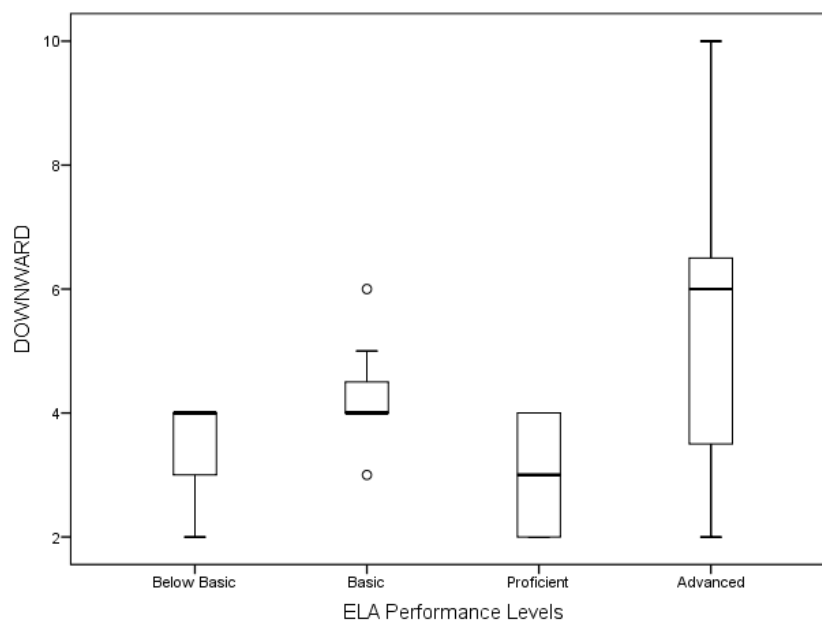
Next, downward comparison orientation was analyzed by examining box plots that compare the mean CO scaled scores of the various performance level groups.

Downward orientation was measured using response data in connection to the following questions:

13. I like to compare myself to people who have a worse life than me.
14. To judge how well I do something, I compare myself to people who do it worse than me.

An investigation of Figures 28 and 29 produced some notable differences in downward orientation between the two school groups. For School #1, the advanced group showed a stronger leaning toward downward comparison in both ELA and math; however, all performance level groups exhibited low-average or low downward orientation.

Figure 28. S1- Downward comparison by PLELA.



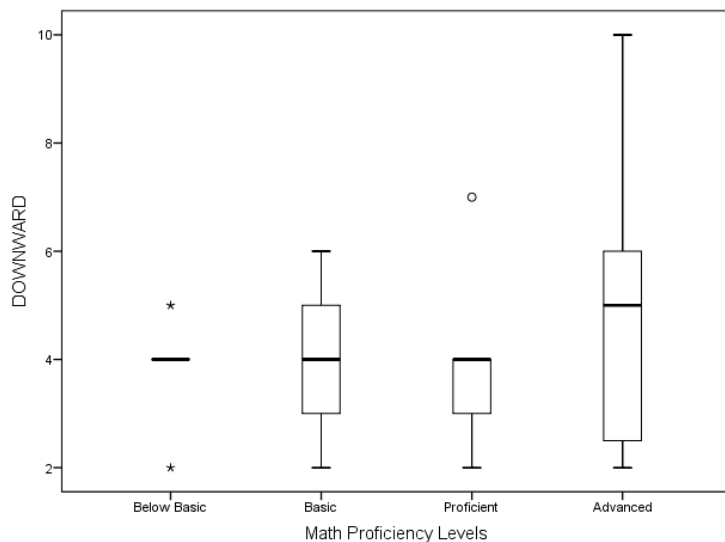


Figure 29. S1 – Means comparison of downward orientation by PLMath.

The results for downward orientation were mixed for School #2’s participants. Figure 30 shows that in ELA, the below-basic performers were more inclined to compare downward, while the mean score for basic and proficient performers ranked lowest, an indication that a large majority of respondents chose “never” in response to the affirmative statements. Figure 33 portrays how each math performance level group demonstrated a very low affinity for making downward comparisons.

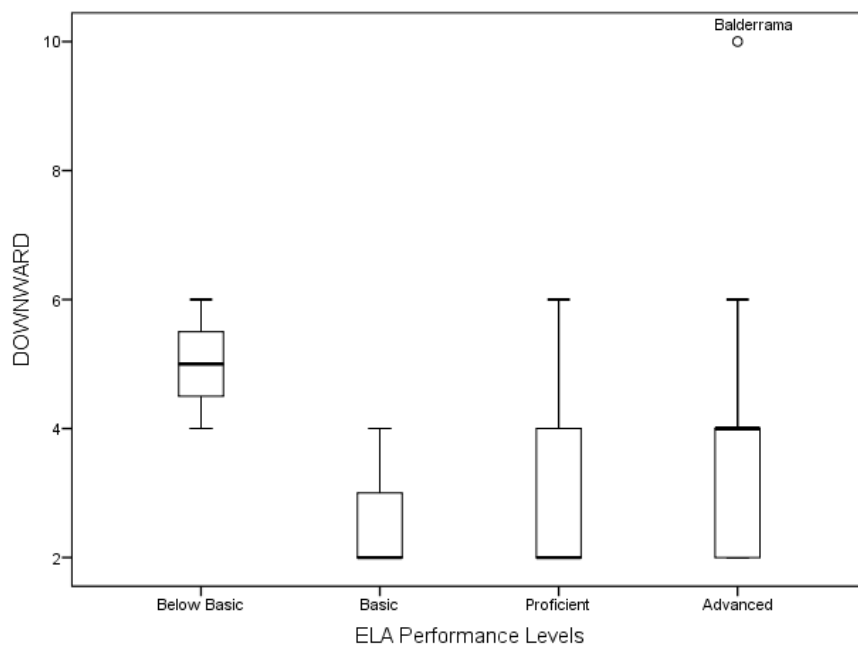


Figure 30. S2 - Means comparison of downward orientation by PLELA.

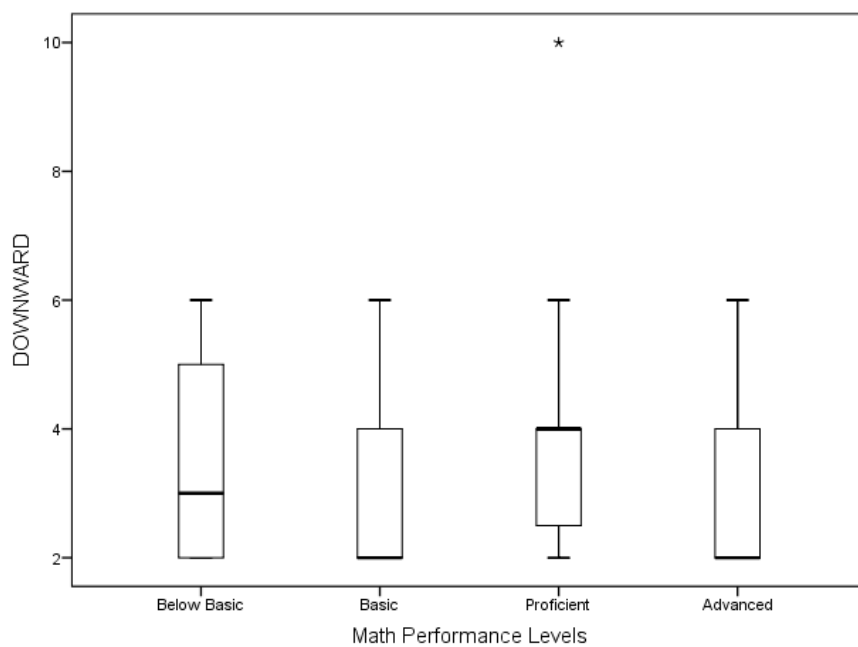


Figure 31. S2- Means comparison of downward orientation by PLMath.

Summary

This study's findings with respect to the relationship between comparison orientation and academic achievement were unremarkable. The participants from both schools seldom responded in the affirmative ("yes" or "always") for general comparison orientation, as well as for each of the directional component measures. In nearly all observed cases, the responses ranged from "never" to "sometimes", which may be indicative of a general disposition toward negative response bias. Despite this fact, this study found some notable differences.

Upward orientation. The measure for upward comparison showed two distinct differences. The participants assigned to T1 at School #1 who were classified as below-basic in ELA, showed the greatest tendency to avoid upward comparison than did their counterparts, in spite of the fact that the other groups showed average or below-average upward orientation. In contrast, participants who scored below-basic in Math were most likely to compare upward. For School #2, the participants who scored at the below-basic level in ELA were the most likely to compare upward, albeit, all performance level groups exhibited upward orientation that was below average. In math, School #2's basic level students showed the greatest tendency to compare upward, while the other performance level groups demonstrated below-average or low upward orientation.

Downward orientation. In both ELA and math, School #1's participants who scored at the advanced level showed the greatest tendency to compare downward. For School #2, in ELA the below-basic group showed the most inclination to compare downward; however, this group's downward orientation was considered below average.

Their counterparts at the other performance levels showed low or very low downward tendencies. In math, all of School #2's performance level groups showed low or very low downward orientation.

In examining the relationship between comparison orientation and academic achievement this study sought to test the hypothesis that a statistically significant relationship exists. This step in the data collection phase involved using inferential statistics to collect this data; however, the chi-square calculation yielded no statistically significant results. In addition to performing chi-square calculations, this study produced a linear regression analysis using CO as the dependent variable and ELA and Math scaled scores as the independents, but still found no statistically significant relationship between the variables. This finding, along with the results discussed in two previous sections, will be discussed and summarized in terms of any trends and patterns that may exist.

Chapter Four Summary

This study found many similarities, as well as differences in the data gathered relating to each research question. Question 1 sought to identify any significant correlations between self-concept and academic achievement. The data revealed distinct differences in school-average achievement, albeit, not by a vast amount. Within each school setting, teacher and ethnicity were identified as significant predictors of ELA and Math scaled scores. The importance of this finding with respect to classroom teacher assignment is monumental. There is ample research that advances the notion that teacher's attitudes, beliefs and perceived expectations can be linked to students' self-concept (Eccles et al., 1985; Harter, 1999). On the other hand, sizable differences were found in classroom-average achievement for both ELA and Mathematics average scaled

scores. Next, correlations were identified between ELA and Math scaled scores as the dependent variables, and behavioral adjustment, popularity and freedom from anxiety. For School #1, behavior and freedom from anxiety were found to be reliable predictors of ELA performance, and popularity and freedom from anxiety predicted both ELA and Math performance for School #2. The next research question helped to shed light on the socialization processes, particularly tendencies toward comparative evaluation, in an effort to identify any correlation to self-concept.

Research Question Two explored the relationship between self-concept and social comparison (CO). The study found that CO was considered low-average between and within school groups. A between-school discrepancy was noted in that School #1's participants, the lower achieving school group, demonstrated a slightly higher propensity to engage in social comparison. A similar, within-school trend was identified for S1, as participants assigned to T1, the lower performing group, reported that they were more inclined to compare themselves to others than were their counterparts, assigned to T2. These findings are in conflict with the findings of Blanton et al. (1999) whose findings suggested that high achieving individuals engage in social comparison to a greater degree. While such a result may contradict other studies, it could present a prospect for further examination and could hold potential for future remediation.

Finally, inferential statistical analysis revealed that freedom from anxiety (FRE) was statistically significant in the relationship with CO for School #1. This result suggests that there is a strong relationship between anxiety and comparative evaluation amongst the participants at S1. For S2, this study found a statistically significant relationship existed between CO total self-concept (TOT) for School #2. These findings

support the theory advanced by Marsh and Shavelson (1985) that self-concept is multifaceted and hierarchical and that it is formed in response to experiences, interactions and perceptions of an individual's environment. For participants at S1, the relationship between comparison orientation and self-concept involves one, specific dimension of the self-concept domains, freedom from anxiety (FRE), which, according to Marsh and Shavelson's 1989 model, falls under the "non-academic self-concept" category which includes the social, emotional, and physical subareas (Marsh & Shavelson, 1989, p. 108). Furthermore, there is a substantial negative correlation, as well. This means that as CO increases, freedom from anxiety decreases. Further examination to identify any additional correlations is warranted, as the negative effect could be detrimental to other areas of self-concept. These findings support the final facet of this study which is to identify any links between comparison orientation and academic achievement.

The principal focus of Question Three was to establish a social comparison profile for each school and school group, and to determine if any correlations existed between comparison orientation and academic achievement. Another aim was to identify, specifically, the nature of comparison orientation (upward or downward) and the extent to which the directional component may be correlated with ELA and Math proficiency levels. This study found that the mean score for general comparison orientation for both schools was considered low-average. As stated earlier, the results showed a within-school difference for School #1 with the T1 participants showing a higher than average inclination toward social comparison.

With respect to directionality, this study found several notable within-school similarities and differences. The scale for measuring upward orientation produced data

for both schools that indicates that, in general, all performance-level groups, from *below-basic* to *advanced* report a low tendency to engage in upward comparison. Finally, this study's inferential statistical calculations found that no statistically significant correlations were identified between CO and academic achievement. This is quite significant since a high statistical significance was found between CO and FRE for S1 participants. This finding suggests that there may be other correlations to freedom from anxiety in the non-academic self-concept categories (i.e., social, emotional or physical) that are worthy of further investigation. For S1, since freedom from anxiety can be explained by variations in comparison orientation, it is crucial that some concerted effort be made to address this phenomenon at the school or possibly even at the District level. These results, as well as this study's recommendations based on the conclusions drawn are discussed in detail in Chapter Five.

Chapter Five: Conclusions and Recommendations

There were two facets to the purpose of this study: (a) to explore the average classroom and average school achievement trends as measured by the California statewide accountability system mandated by the No Child Left Behind Act of 2001; and (b) to identify correlations, if any, between self-concept, average classroom/school achievement, and social comparison processes in fifth grade students in an urban school setting. Consistent with earlier findings, the researcher for the present study expects that the relationship between academic achievement and self-concept will be most evident when examined in the context of the classroom setting (Rogers et al., 1978).

The following questions formed the basis for this study:

1. To what extent, if at all, does a statistically significant relationship exist between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do any between-school differences exist in the relationship between self-concept and academic achievement in fifth grade students?
 - To what extent, if at all, do any within-school differences exist in the relationship between self-concept and academic achievement among fifth grade students?
2. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and self-concept?
3. To what extent, if at all, does a statistically significant relationship exist between comparison orientation and academic achievement?

This study used a mixed methodological approach. A quantitative analysis of the academic achievement data was conducted to construct the achievement profiles of each school group. Qualitative analysis was used in connection with self-reports of social comparison orientation and self-concept obtained through two separate questionnaires administered to two different school groups from the same school district. The original intent was to gather data from fifth-grade participants from four different elementary schools with vast differences in achievement. The schools that agreed to participate in the study were not a part of the original list of solicited schools, but did fit the desired profiles, one higher performing school with an API score that meets the 800 and above target (CDE, 2011) and one lower performing school that has an API score significantly lower. School #1's school-wide API score fell within the range of approximately 730 to 750 the two years preceding this study and School #2's scores fell within the range of 800 and 815. In total, the number of participants was N76, with *n*22 from S1, and *n*54 from S2.

Summary of Results

To provide background information for making comparisons, this study explored achievement data categorized by certain demographic variables and found statistically significant relationships for both schools and in both subjects. Teacher assignment and ethnicity were statistically significant variables that were reliable in explaining variations in academic achievement across subjects for all participants. Gender was another variable that was statistically significant in relation to mathematics scaled scores for School #2. The finding that being assigned to a particular teacher had a very high correlation to academic achievement underscores various research findings that suggest

teachers exert a considerable amount of influence on attitudes and beliefs about academic competence, especially during elementary education (Lewis & Sullivan, 2005). Other studies propose that teacher expectations (Weinstein, 2002), as well as evaluative feedback can foster mastery or facilitate helplessness (Dweck & Leggett, 1988). There is a wide body of research that advances the notion that a teacher's beliefs, expectations and professional skill and performance all have a substantial impact on perceived competence and achievement motivation in students (Turner, Meyer, Midgeley, & Patrick, 2002; Weinstein, 2002; Urdan & Schoenfelder, 2006).

In addition to illuminating the relationship between teacher assignment and achievement, this study found that ethnicity had a statistically significant correlation to achievement; however, due to the relatively small sample sizes of various ethnic groups in relation to the largest group, this study concluded that providing such data may not provide valuable data and may affect validity. In addition to teacher assignment, gender, and ethnicity, this study recognized that various other socio-environmental variables may combine to affect student outcomes; therefore, other contextual factors were explored. The data collected in response to each research question shed light on several distinct patterns, in addition to highlighting many similarities. To explore the relationship between self-concept and academic achievement for the first research question, the next step in this study was an examination of school-average achievement.

Research Question One

School-average achievement. School-average achievement was similar in that the participants for both schools had a mean scaled score in ELA and mathematics of 350 or above (the proficient target). School #2 (S2) had a higher scaled score average by

roughly 20 points in each subject. Over the last several decades, social-psychology researchers have maintained a consistent view that high-achieving learning environments are coupled with lower academic self-concept (Marsh & Hau, 1999; Marsh et al, 2008; Rogers et al., 1978). This study found that academic self-concept or intellectual and school status (INT) was slightly higher for S1, the school with the lowest academic achievement. This result is consistent with the BFLPE (big-fish-little-pond-effect) theory that proposes higher achievement learning environments tend to correlate with lower academic self-concept and vice-versa, or the SFBPE (small-fish-big-pond-effect). To delve further into the achievement profiles of each participant group, classroom-average achievement was explored to elucidate any within-school distinctions.

Data analysis for classroom-average achievement. The investigation of classroom-average achievement revealed several within-school differences in achievement that were quite pronounced. S1 showed a wide disparity in achievement among classroom groups. In ELA, the difference was nearly 60 points with Teacher #1's participants (T1) demonstrating higher scores than Teacher 2's classroom group (T2). In Math, approximately 100 points separated T1 participants from the T2 group. Consistent with the aforementioned studies that link higher academic performance to lower academic self-concept, T1 participants, the higher achieving group, by far, had a much lower mean score for intellectual and school status (INT), the measure for academic self-concept. S2 exhibited similar results but with smaller gaps between each classroom group. In ELA, 50 points separated the top performing classroom group (T5) from the next highest performing groups (T3 and T7), and in Math, 30 points separated T5 from the same two classroom groups. In line with the BFLPE, the highest performing group

(T5 participants) had a mean INT score that was similar to that of their lower-performing peers. Despite these illuminating results, this study found a major contradiction to other prominent studies that identify academic self-concept as having a strong correlation to academic achievement. Conversely, this study found no statistically significant correlation between academic self-concept and achievement for either group of participants, at any level. For this reason, the remainder of the investigation placed closer scrutiny on the related subdomains of self-concept, as well as the socialization processes that might further illuminate the relationship between self-concept and academic achievement.

Data analysis of self-concept. Self-concept was measured according to the interpretative scales suggested by the Piers-Harris2 manual (Piers, 2002). Examination of the Piers-Harris 2 validity scales for incomplete responses (INC) and response bias (RES) revealed very few instances of inconsistency in responses, but a higher than average response bias, indicating that participants have reported a higher than usual amount of “yes” responses (Piers, 2002). The latter should be taken into consideration as a possible limitation. The study found that total self-concept (TOT) was considered average both at the school level and according to classroom groups. Between schools, there were no remarkable differences found in total self-concept as the mean T-scores for each school was considered average. The same held true for within-school groups, as well. Perceptions of intellectual or school status (INT) was average for both school groups, as well as for each school’s classroom groups; however, it was noted that in S1, T2’s participants held the highest average T-score at 59 (≥ 60 is considered high). This result corroborated the various research findings that endorse the theory that lower

academic achievement correlates to higher academic self-concept (Marsh & Hau, 1998; Marsh & Hau, 2003; Marsh et al., 2008).

Between-school findings. The first question explored correlations between self-concept and academic achievement and found that for S1, there was a negative correlation found between ELA scaled scores (SSELA) and freedom from anxiety (FRE), meaning that as ELA scaled scores increase, anxiety levels increase. For S1, despite the absence of statistically significant correlations between ELA and the self-concept variables, (see Table 7), a linear regression analysis provided a correlation coefficients table (Table 11) that identified a statistically significant relationship between SSELA and the self-concept variables, BEH and FRE. In Mathematics, no such correlations were found for S1. The fact that no statistically significant relationship existed

For S2, this study found both a negative correlation and a statistically significant relationship between achievement in ELA and Math and the variable that represents self-appraisals of popularity, POP. These findings evoked the notion that since these correlated variables represent socio-environmental factors, the implication is that social context may play a more significant role in predicting academic performance among this particular group of participants. The correlated variables (FRE, POP and BEH) were included in the inferential statistical calculations, along with INT, for contrastive analysis, to develop a model for further inquiry.

Within-school findings. The present study found significant within-school differences in the mean T-scores that measure freedom from anxiety (FRE). For S1, T1 participants had a mean T-score that was just below average and the gap between the two school groups (T1 and T2) was 7 points. For S2, all classroom groups had average FRE

T-scores; however, T6 participants' had the lowest mean score. Finally, for S2, all classroom groups, self-perceptions of popularity (POP) were considered average except for one distinct difference: The below-basic group had the most favorable view of themselves as popular among peers. This finding corroborates reports from earlier studies that advocate the idea that popular children view themselves more favorably in a variety of aspects; however, these positive views do not necessarily equate with their performance or abilities (Boivin & Bégin, 1989; Guay et al., 1999). This outcome may present opportunities as research has shown that having a sense of connectedness or a feeling of relatedness is fundamental to the process of learning (Guay et al., 1999). The next step in the process was the analysis of inferential statistics to determine the statistical significance of these self-concept variables in relation to achievement.

Question one results. The inferential statistical calculations were conducted using linear regression analysis to determine if there was a statistically significant relationship between self-concept and achievement. For S1, a correlation coefficients calculation found that self-evaluations of behavioral adjustment and freedom from anxiety (BEH and FRE) could be considered statistically significant predictors of ELA scaled scores with more than 96 and 99 percent confidence, respectively. In Math, the results for S1 showed no statistical significance between the self-concept variables and Math scaled scores. The result of the linear regression analysis for S2 indicated that there was a statistically significant relationship between FRE and ELA. This may be a very substantial finding when other results are taken into consideration. , as well as for *popularity* (in relation to Math) were statistically significant variables. These results may have significant implications for teaching and learning. According to the authors of the

Piers-Harris 2 self-concept scale, freedom from anxiety relates to self-reports of social functioning and a broad range of emotional states (Piers, 2002). Many studies have linked socio-emotional, cognitive, behavioral adjustment, and other environmental factors with achievement motivation (Deci & Ryan, 2000; Dweck, 2002; Wigfield & Eccles, 2002). Others have theorized that anxiety has detrimental effects and is linked to performance deficits (Zeidner & Matthews, 2005). The research and current theory on the relationship between anxiety and performance focuses on evaluation anxiety (fear or worry of the consequences of being judged), and within that framework, the type of anxiety may be considered trait anxiety, an innate disposition, or situational anxiety, developed as a product of antecedent conditions or situational factors (Zeidner, 1998). This study examined anxiety in the realm of its cognitive and behavioral distinctions, which includes a worry or concern about the prospect of failure and the outcomes associated with such failure. This type of evaluation anxiety, also known as test anxiety, often leads to avoidance of the perceived threat, diminished cognitive processing, and ultimately, loss of intrinsic motivation (Elliot, 1999). For the purpose of this study, recommendations for interventions that may moderate the effects of anxiety on performance are based on situational anxiety, considering the limitations and extent to which an educator would have any ability to control for trait anxiety.

Recommendations

A substantial body of research has affirmed the multifaceted nature of self-concept and traditional methods for implementing self-enhancement interventions have targeted global self-concept, rather than specific facets. Being that there is very little empirical research espousing a particular intervention or a particular set of best-practices,

the recommendations included in this section are based on research-based self-enhancement principles. The notion that intelligence is not fixed (entity theory) and is subject to change (incremental theory) has led many researchers to the study of two different approaches: Direct and indirect intervention models.

Direct Enhancement Approach.

The direct enhancement approach stipulates that teachers and researchers supply subjects with performance feedback that serves a particular purpose. Brophy (1981) provided 12 guidelines for implementing the direct enhancement approach. According to the guidelines, in order for praise to be effective, it must meet the following conditions:

Effective Praise

1. Is delivered contingently
2. Specifies the particulars of the accomplishment
3. Shows spontaneity, variety and other signs of credibility; suggests clear attention to the students' accomplishment
4. Rewards attainment of specific performance criteria (which can include effort criteria, however)
5. Provides information to students about their competence and the value of their accomplishments
6. Orients students toward better appreciation of their own task-related behavior and thinking about problem solving
7. Uses own prior accomplishments as the context for describing present accomplishments

8. Is given in recognition of noteworthy effort or success at difficult tasks
(for this student)
9. Attributes success to effort and ability, implying that similar successes can be expected in the future
10. Fosters appreciation of and desirable attributions about task-relevant behavior after the process is completed
11. Focuses students' attention on their own task-related behavior
12. Fosters appreciation of and desirable attributions about task relevant behavior after the process is completed (Brophy, 1981, p. 26).

Direct enhancement approach and freedom from anxiety. Providing effective feedback is critical to the success of individuals experiencing evaluation anxiety. Negative feedback, especially if competence-related, can have detrimental effects on the academic self-concept of students plagued by test anxiety (Zeidner & Matthews, 2005). This study revealed a consistent, significant correlation between achievement and low high levels of anxiety at all performance levels in both subjects among all participants. While there are a wide variety of potential effects generated from high anxiety in relation to academic performance, avoidance goals are a particular type of coping strategy that highly anxious students may adopt. The following are some of the performance avoidance and self-regulating behaviors that are often associated with evaluative anxiety: (a). Procrastination, (b). Self-handicapping (exerting minimal effort to avoid feared failure), and (c). Disengagement or diverted attention. Students who procrastinate may do so as a means of prolonging the negative consequence of failure. Self-handicapping is another way to minimize the effects of failure by providing the individual with the ability

to attribute failure to a lack of effort, and similarly, disengagement provides cover for attributing the lack of success to a lack of interest. If not addressed and remediated, these responses to evaluative anxiety become part of a recursive cycle, leading to an increased possibility of performance deficits (Elliot, 1999). The following are additional research-based approaches to addressing evaluative anxiety that may prove beneficial:

1. Provide direct instruction in the incremental view of intelligence (Dweck, 1999)
2. Avoid negative, evaluative feedback and provide effort-based feedback and praise
3. Promote autonomy and control (achievement/attribution-goal theory, Dweck, 1999)
4. Encourage focus on mastery and skill attainment (achievement theory, Dweck, 1999), rather than competence which can lead to helplessness, according to performance-goal theory (Dweck & Leggett, 1988)
5. Facilitate development of appropriately challenging, attainable goals (Schunk; Pajares, 1996)

As indicated, the researcher of the present study proposes that evaluation anxiety is often mediated by the adoption of performance-avoidance goals; however, the fact that in some cases evaluative anxiety can serve as the impetus for activating approach goals should not be ignored. An alternative to the direct enhancement model is the indirect enhancement approach. Teachers and researchers must base decisions on whether to implement one approach over the other on the situation-specific, performance-related behaviors observed. In some instances, the indirect approach may be appropriate.

Indirect Approach.

The indirect approach implements strategies that indirectly enhance self-concept by targeting specific components, such as academic self-concept. The goal of this type

of intervention is to facilitate the internalization of performance feedback. Studies using indirect self-enhancement methods have utilized attributional feedback to foster positive self-concept by emphasizing internal versus external attributions (attributing success or failure to self or other factors). A prominent study was conducted using internally focused (e.g., “Sally, you have a lot of strengths in mathematics”) and attributional feedback (e.g., “no, that’s not right. You have the ability to do well and will do well when you try harder”) and the findings indicated that the researcher-administered treatment had a modest effect on self-concept in reading and math, while the teacher-administered treatment had no significant effect. Neither the researcher nor teacher-administered treatment had a significant effect on academic achievement (Craven et al., 1991, p. 25). Since the researcher-administered aspect of this study did produce a modest effect on academic self-concept in math and English, this approach may be worth further consideration. Should schools adopt this approach, the following recommendations should be taken into consideration:

1. As suggested by the researchers in the aforementioned study, “When children are removed from the regular classroom by credible others for a short period, modest enhancement of specific facets of self-concept can be achieved by employing the intervention used in this study” (Craven et al., 1991, p. 25).
2. Any study utilizing internally focused and attributional feedback should consider incorporating skills training with monitoring for potential effects on academic achievement in tandem with the indirect enhancement approach (Craven et al., 1991).

Both the direct and indirect enhancement models show promise for remediating the negative effects associated with performance and evaluative anxiety; therefore, selecting an approach that best fits the individuals' and contextual characteristics will be an important decision which should be made in consultation with experienced researchers in this field of study. The next set of recommendations is related to this study's finding that a statistically significant relationship exists between academic achievement in English language arts and mathematics and the self-concept domain, popularity.

Popularity. As reported in the first section dealing with research question 1, popularity (POP) was negatively correlated and statistically significant in the relationship with achievement for S2. In most cases, the research in this area supports the notion that students who are popular are generally well-adjusted, enjoy positive peer interactions, and often exhibit high achievement (Buhs, Ladd & Herald, 2006; Guay et al., 1999). In addition, students who perceive themselves as being accepted by peers have been shown to exhibit academic motivational behaviors (Wentzel, 1998; Wentzel et al., 2003).

This study's findings present a paradox in that as ELA and Math performance increases, perceived popularity would decrease according to this study's findings. Unfortunately, this means that popularity may have a detrimental effect on academic achievement. Without longitudinal data, it would be impossible to attribute this phenomenon to any particular set of conditions or antecedents; however, the negative correlation between academic achievement and popularity illuminates the possibility that social identity (perception of oneself as a member of a group with its own set of norms and values) may be a factor.

Recommendations:

1. Develop a classroom identity by establishing a set of shared values and learning goals.
2. Develop a sociogram or other sociometric tool to assess social interaction.
3. Create an environment that is socially, emotionally, and intellectually safe.
4. Create learning experiences that are personally relevant and meaningful.
5. Provide multiple opportunities for cooperative group work related to shared goals.

These recommended classroom practices are grounded in the belief that adolescent peer groups are instrumental in the development of identity and self-perceptions, and it is within this social context that norms, values and habits of mind are formed (Brown et al., 1994); therefore it is important that these students receive peer social support, clear values, and instrumental help from peers within the classroom environment to increase the likelihood of a correlation to achievement motivation (Wentzel, Battle & Looney, 2001). This aspect of the study has identified significant correlations between self-concept and academic achievement while the next facet of this study centered on the social environment. The investigation of possible correlations in the relationship between self-concept and comparison orientation, the results and this study's recommendations are discussed in the section that follows.

Question Two Summary of Findings

The next section addressed Question Two which explored the relationship between social comparison orientation (CO), and total self-concept (TOT), along with its associated subdomains, *behavioral adjustment* (BEH), *intellectual/school status* (INT),

freedom from anxiety (FRE), physical appearance (PHY), popularity (POP) and happiness/satisfaction (HAP). This aspect of the study was grounded in the theory that there would be strong correlations between self-concept and social comparison in preadolescents (Rogers et al., 1978). The analysis of data surrounding Question Two led to four significant findings: (a) S1's participants, the lower achievement group, had a higher comparison orientation mean score than did their higher achieving counterparts at S2; (b) in contrast, the higher-performing classroom group at S1 had a higher comparison orientation mean score than their lower-performing peers; (c) all participants showed a low-average tendency to compare upward and; (d) the mean downward orientation scores for the majority of the participants indicate that they seldom compare themselves to individuals of inferior attributes. These findings have several implications. The one that stands out the most is that while the higher performing students at S1 showed a higher tendency to engage in social comparison, their self-reports, along with the self-reports of all the other participants, showed a disaffection for upward comparison, and an even greater apathy toward downward comparison. An earlier study found that when comparison targets are implicit, rather than chosen by the individual in an explicit manner, upward comparison usually has a contrastive effect (Stapel & Suls, 2004). For the T1 group at School #1, this finding may insinuate a contrastive effect similar to those found in BFLPE studies; however, further investigation into correlations with academic self-concept would be necessary to make such a claim. An alternative view holds that when comparison targets are imposed, individuals prefer to compare with similar others. The difference in comparison orientation between the two schools was the result of a significant within-school difference between S1's classroom groups where the lower-

performing group, had a much higher tendency to engage in social comparison. This finding supports findings from an earlier study that suggested the relationship between academic achievement and self-concept is most evident when examined in the context of the classroom setting (Rogers et al., 1978).

This aspect of the study was grounded in the theory that there would be strong correlations between self-concept and social comparison in preadolescents (Rogers et al., 1978). A correlations table was produced and an investigation revealed highly significant correlations between comparison orientation and total self-concept, as well as between comparison orientation and freedom from anxiety for both schools. Additionally, both self-concept variables were found to be negatively correlated; the interpretation being that as comparison orientation increases, freedom from anxiety and total self-concept decreases.

This finding underscores the tenuous nature of the relationship between social comparison processes and self-concept, particularly with respect to feelings of anxiety. Since this study found social comparison to be highly correlated with total self-concept and feelings of anxiety in fifth-grade students, the social environment and peer context may have the potential to enhance or hinder self-perceptions of competence. The researcher of the present study concluded that a substantial opportunity exists in that if participants lack the motivation to engage in comparative evaluation, directed attention toward instructional grouping patterns may produce useful data. Potential strategies and interventions will be discussed in the recommendations section that follows.

Recommendations

To address any potential evaluative anxiety that may correlate to social comparison processes, the first prescribed practice involves a method recommended in the previous section, which is to develop a safe and responsive environment. Next, assess students' attributions for success and failure by developing a questionnaire with questions, such as: If I do poorly on a math test, it is because: (a). I did not study (incremental view of intelligence) (b). Some questions were too difficult ([entity view of intelligence – intelligence is fixed] Pintrich & Schunk, 2002). Develop a profile of attributional styles for each student and develop flexible groups (alternating members based on current focus and needs) in a manner similar to the example shown in Figure 32:

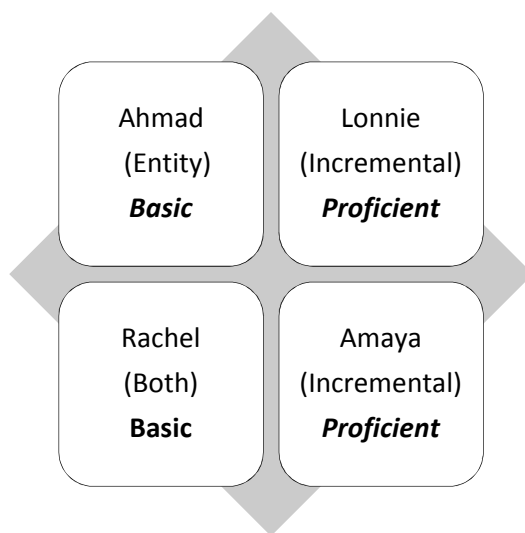


Figure 32. Flexible groups based on attributional style and performance level.

Next, consider creating individual growth plans that include realistic and attainable progress goals and meet with each student to review goals and planned actions. Provide direct, explicit instruction in incremental intelligence theory (Dweck, 1999) to whole group and provide reinforcement within small group structures. During small group work, provide effort-based, constructive feedback, avoiding evaluative feedback at

all costs. Finally, to assess the effectiveness of the intervention, after the initial period of consistent implementation, administer the same questionnaire to identify any transformations or stagnant views. Finally, compare results of second questionnaire to performance related to growth goals to identify any patterns or trends. Celebrate or acknowledge individual and group milestones, and repeat the process as often as necessary.

Next, this study conducted an investigation that centered on the hypothesis that social comparison and academic achievement are positively correlated. Research Question Three guided the final facet of the study.

Question Three Summary of Findings

This aspect of the study focused on two concepts. The first emphasized the trajectory of the comparison (upward or downward) as a basis for testing the hypothesis that students in high-performing learning environments tend to have lower academic self-concept (Marsh & Hau, 1998; Marsh et al., 2008). The second focused on possible correlations between comparison orientation and academic achievement. The results were quite varied. The study found more similarities than disparities between the schools with respect to upward and downward orientation.

Between-school analysis. This investigation compared upward and downward orientation mean scale scores between participant groups classified by ELA and Math performance levels (i.e., below-basic, basic, proficient and advanced). The inquiry into the relationship between social comparison and academic achievement revealed a distinct pattern. In general, a large majority of participants from both schools did not respond positively to statements affirming upward or downward comparison orientation. Given

that social comparison with targets of superior abilities has been associated with higher academic performance (Blanton et al., 1999; Marsh et al., 2000), this finding evokes many possibilities as to the types of measures that may be undertaken to foster an environment where comparative evaluation may lead to increased academic motivation and the adoption of performance goals. There is ample empirical evidence that a number of interventions have been effective in this regard and a summary of several approaches will be discussed in the recommendations section at the end of this chapter. Having established a general comparison orientation profile for each school, a within-school analysis offered additional insights.

Within-school analysis – S1. In exploring upward comparison this study sought to test the hypothesis that upward comparison results in higher performance (Blanton et al., 1999). The data did reveal some unique outcomes among the various classroom groups. ELA performance level groups for S1, the below-basic group assigned to T1 reported the lowest possible mean score, indicating a strong aversion to engaging in upward comparison. This outcome tends to support the theory espoused by Blanton et al., (1999), in that the lowest performing group demonstrated a strong tendency to avoid making upward comparisons. The basic group had the highest mean upward orientation scale score, a 6 on a scale from 2 to 10, an indication that a number of individuals in this group are motivated, on occasion, to compare themselves to individuals they perceive as having superior qualities or abilities. This outcome presents an opportunity to explore a variety of measures that may encourage comparative evaluation that may foster performance goal orientation. In Mathematics, the below-basic group had the highest upward orientation with a mean score of 6, compared to the other performance level

groups who each had scores of 4 or 5. These findings present both a challenge and an opportunity. It has been established that comparison with targets of higher ability is linked to higher academic achievement; the reason being that the individual making the comparison is able to calibrate self-evaluative opinions which has been shown to lead to higher academic self-concept (Blanton et al., 1999; Lockwood, Jordan, & Kunda, 2002); however, the challenge occurs when higher achieving students are grouped with lower-performing counterparts. Recommendations for addressing these issues and a discussion of the pros and cons of each approach are included in the recommendations section of this chapter.

Within-school analysis – S2. In ELA, all performance level groups had mean, upward orientation scaled scores that were negatively skewed an indication that the majority of the participants reported lower inclination to compare upward. In Mathematics, the basic performance group had a mean score of 6 (moderate), the highest of the performance level groups. Among the remainder of the performance groups, upward orientation mean scores were interpreted as low or very low. Being that the outcomes for S2 closely resembled the results for S1 the same recommendations are applicable to the outcomes for the S2 participants.

Recommendations

Researchers in the field of self-concept and social comparison have posited that heightened self-evaluation based on comparison with high-achieving peers leads to higher academic outcomes (Altermatt & Pomerantz, 2005; Blanton et al., 1999). In stark contrast, a negative or contrastive effect can result from such comparisons (Altermatt & Pomerantz, 2005). Since the self-reports made by the majority of participants indicate

very little evidence of social comparison in either direction, further investigation into the beliefs and attitudes toward social comparison processes may be warranted. To determine the most effective way to facilitate the best opportunities for making comparative evaluations, this study's researcher recommends that teachers engage in action research to assess the current organizational structure and grouping practices, and use this data to determine the best approach to facilitating learning experiences that provide optimal conditions for students to make positive comparative evaluation of their skills and abilities. To conduct such an investigation, many social and environmental factors must be considered.

At the school level, determine if classes are formed heterogeneously, homogeneously, or according to a hybrid structure. The same determination should be made with respect to within-classroom grouping patterns. Next, ascertain whether comparison targets are imposed (determined by administration or teachers), or if students are afforded opportunities to select comparison targets. Record this information and evaluate the relationship between current achievement trends and current grouping patterns as the baseline for data collection analysis. Social comparison has been shown to produce both assimilative and contrastive effects, and which outcome prevails depends largely upon the individual's ability to self-select (Wheeler & Suls, 2005). Based on this concept, teachers should afford students the option of identifying two to three individuals whom they would most prefer to have as members of a skills practice group. Collecting this data should confirm or invalidate self-reports of comparison orientation (i.e., responses to the INCOM) with respect to preferences for comparison targets (upward or downward).

Teacher researchers should use the data collected to establish experimental, flexible groups including at least one student-selected target, and at least one teacher-imposed target. To conduct such a study, teacher researchers must conduct observations, monitor, and record progress, then assess and reflect on any achievement patterns identified under the experimental grouping structure. In order to collect meaningful data, this type of action research project should take place over time, for at least one school term, or even under a longitudinal format spanning the course of an entire school year.

According to social comparison theory, comparison targets must have some similar attributes to establish relatedness or a meaningful connection, a necessary condition for assimilation (Wheeler & Suls, 2005). Prior to collecting data, it is important to establish the criteria for assessment, by determining the sources of data to be collected. These data sources may include observed behaviors (i.e., performance versus avoidance goals), and student achievement patterns at various stages under various grouping structures. When students are not afforded the opportunity to select their own comparison targets, and if the imposed target evokes a contrastive effect in regard to self-concept, the effect could be detrimental to academic motivation and eventually, have a negative impact on achievement. This recommendation, as well as those set forth in previous sections, support further inquiry as research has shown that investigations into the relationship between self-concept, social comparison, and academic achievement are most effective when the uniqueness of the immediate social context is considered (Rogers et al., 1978).

Conclusion

The data and results of the investigations into the relationships between self-concept, social comparison and academic achievement have led to several findings that both support and contradict several of the hypotheses that guided this study. In response to the first research question, this study found subject-specific correlations between self-concept and academic achievement, consistent with prior research. The investigation surrounding the second research question resulted in the finding that the mean scores both school's participants' for comparison orientation were low to low-average, raising the question of whether the participants value engaging comparative evaluation, or if the reported inclination to avoid comparison is the result of experiencing a negative or contrastive effect. The researcher of the present study holds the view that action research at the classroom level may hold the most promise for illuminating the best possible approach for developing effective grouping strategies that maximize each individual's learning experiences. Finally, in regard to the findings for the third research question, while there was no statistically significant correlation found between comparison orientation and academic achievement, in general, there was evidence of differences between-groups in upward or downward comparison orientation at the school level. Consistent with the BFLPE (Marsh & Hau, 2003), this study found that high-achieving students at School #1 reported a tendency to engage in downward comparison. On the other hand, the results showed promise in that amongst all participants, self-reports of upward comparison orientation indicated that students who performed at the below-basic and basic levels in math and English language arts were the most likely to compare themselves to individuals of superior talents or abilities. For this researcher, these

findings underscore the importance of making a concentrated effort to explore interventions aimed at maximizing learning opportunities by promoting and facilitating comparative evaluation to ensure that students are able to make accurate appraisals of their skills and abilities.

In conclusion, this study has sought to illustrate how self-concept, social comparison and academic achievement may interact by identifying significant correlations. As indicated throughout this study, there is plenty of room for further study of the relationships between these variables. The results and conclusions drawn from this study should provide the basis for further discussion and the motivation for future investigations to add to the growing body of research.

REFERENCES

- Abrams, D., & Hogg, M. A. (1990). *Social identity theory*. New York, NY: Springer-Verlag.
- Ahmavaara, A., & Houston, D. M. (2007). The effects of selective schooling and self-concept on adolescents' academic aspiration: An examination of Dweck's self-theory. *British Journal of Educational Psychology*, *77*(3), 613-632. doi:10.1348/000709906X120132
- Altermatt, E. R., Pomerantz, E. M. (2005). The implications of having high-achieving versus low-achieving friends: A longitudinal analysis. *Social Development*, *14*, 61-81.
- Altermatt, E. R., Pomerantz, E. M., Ruble, D. N., Frey, K. S., & Greulich, F. K. (2002). Predicting changes in children's self-perceptions of academic competence: A naturalistic examination of evaluative discourse among classmates. *Developmental Psychology*, *38*(6), 1.
- Asplough, J. W. (2001). Achievement loss associated with the transition to middle school and high school. *The Journal of Educational Research*, *92*, 20-25.
- Blackwell, L. S., Trzesniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, *78*, 246-263. doi:10.1111/j.1467-8624.2007.00995.x
- Blanton, H., Buunk, B. P., Gibbons, F. X., & Kuyper, H. (1999). When better-than-others compare upward: Choice of comparison and comparative evaluation as independent predictors of academic performance. *Journal of Personality and Social Psychology*, *76*(3), 420-430. doi:10.1037//0022-3514.76.3.420
- Boggiano, A. K., & Ruble, D. N. (1979). Competence and the overjustification effect: A developmental study. *Journal of Personality and Social Psychology*, *37*(9), 1462-1468. doi:10.1037/0022-3514.37.9.1462
- Boivin, M., & Bégin, G. (1989). Peer status and self-perception among early elementary school children: The case of the rejected children. *Child Development*, *60*, 591-596. doi:10.2307/1130725
- Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research*, *51*(1), 5-32. doi: 10.3102/00346543051001005
- Bryman, A. (2008). *Social research methods*. New York, NY: Oxford University Press.

- 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. *Journal of Educational Psychology, 98*, 1-13. doi:10.1037/0022-0663.98.1.1
- Butler, R. J., & Gasson, S. L. (2005). Self Esteem/Self-concept scales for children and adolescents: A review. *Child and Adolescent Mental Health, 10*(4), 190-201.
- Buunk, A. P., Dijkstra, P., Kuyper, H., van der Werf, G., & van der Zee, Y.G., (2008). Social comparison in the classroom: A review. *Review of Educational Research, 78*(4), 828-879. doi:10.3102/0034654308321210
- Byrne, B. M., & Shavelson, R. J. (1986). On the structure of adolescent self-concept. *Journal Of Educational Psychology, 78*(6), 474-481. doi:10.1037/0022-0663.78.6.474
- Byrne, B. M., & Shavelson, R. J. (1996). On the structure of social self-concept for pre-, early, and late adolescents: A test of the Shavelson, Hubner, and Stanton (1976) model. *Journal of Personality & Social Psychology, 70*(3), 599-613.
- Calculators. (2011). Retrieved from <http://www.researchinfo.com/docs/calculators/samplesize.cfm>
- California Department of Education. (2011a). *2010-11 Academic Performance Index reports information guide*. Retrieved from <http://www.cde.ca.gov/ta/ac/ap/documents/infoguide10.pdf>
- California Department of Education. (2011b). *2010-11 Academic Performance Index (API) Chart*. Retrieved from <http://api.cde.ca.gov/Acnt2011/2011APRSchAPIChart.aspx?allcde=33-67124-6106041>
- California Department of Education. (2011c). *2010-11 Academic Performance Index (API) Chart*. Retrieved from <http://ayp.cde.ca.gov/reports/Acnt2011/2011APRSchAPIChart.aspx?allcde=33-67124-0102731>
- California Department of Education. (2011d). *Technical Q & A: Percent Proficient*. Retrieved from <http://www.cde.ca.gov/ta/ac/ap/techqa06b.asp>
- Campbell, E. Q. (1971). Adolescent socialization. In D. A. Goslin (Ed.), *Handbook of socialization research and theory* (pp. 821-859). Chicago, IL: Rand McNally.
- Cicirelli, V. G. (1976). Effects of evaluating task competence on the self-concept of children from different socioeconomic status levels. *Journal of Psychology, 94*(2), 217.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: Sage.

- Dijkstra, P., Kuyper, H., Greetje van, d. W., Buunk, A. P. , & van der Zee, Y. G. (2008). Social comparison in the classroom: A review. *Review of Educational Research*, 78(4), 828-839,841-879. doi:10.3102/0034654308321210
- Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41(10),1040-1048. doi:10.1037//0003-066X.41.10.1040
- Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia, PA: Psychology Press.
- Dweck, C. S., & Leggett, E. L. (1988). A social cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.
- Dweck, C. S., & Molden, D. C. (2005). Self-theories: Their impact on competence motivation and acquisition. In J. A. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 124-140). New York, NY: Guilford.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53(1), 109.
- Eccles, J. S., Wigfield, A., Flanagan, C. A., Miller, C., Reuman, D. A., & Yee, D. (1989). Self-concepts, domain values, and self-esteem: Relations and changes at early adolescence. *Journal of Personality*, 57, 283-310.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational Psychologist*, 34, 169-189.
- Elliot, A. J. (2005). A conceptual history of the achievement goal construct. In J. A. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 52-72). New York, NY: Guilford.
- Elliot, A. J., & Dweck, C. S. (2005). Competence and motivation. In J. A. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 3-12). New York, NY: Guilford Press.
- Feld, S., Ruhland, D., & Gold, M. (1979). Developmental changes in achievement motivation. *Merrill-Palmer Quarterly*, 25(1), 43-60.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140. doi:10.1177/001872675400700202
- France-Kaatrude, A. C., & Smith, W. P. (1985). Social comparison, task motivation, and the development of self-evaluative standards in children. *Developmental Psychology*, 21(6), 1080-1089. doi:10.1037//0012-1649.21.6.1080

- Frey, K. S., & Ruble, D. N. (1985). What children say when the teacher is not around: Conflicting goals in social comparison and performance assessment in the classroom. *Journal of Personality and Social Psychology*, 48(3), 550-562. doi:10.1037//0022-3514.48.3.550
- 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. doi:10.1037/0022-0663.97.3.337
- Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, 76(1), 129-142. doi:10.1037//0022-3514.76.1.129
- Goethals, G. R., & Darley J. (1977). Social comparison theory: An attributional approach. In J. M. Suls & R. L. Miller, (Eds.) *Social comparison processes: Theoretical and empirical perspectives* (pp. 259-278). Washington, DC: Hemispheres.
- Good, C. A., Aronson, J., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Applied Developmental Psychology*, 24, 645-662. doi:10.1016/j.appdev.2003.09.002
- Graham, S. & Hudley, C. (2005). Race and ethnicity in the study of motivation and competence. In J. A. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 392-413). New York, NY: The Guilford Press.
- Great schools. (n.d.). Retrieved from the Great Schools website: <http://www.greatschools.org/cgi-bin/ca/district-profile>
- Guay, F., Boivin, M., & Hodges, E. V. (1999). Social comparison processes and academic achievement: The dependence of the development of self-evaluation on friends' performance. *Journal of Educational Psychology*, 91(3), 564-568. doi:10.1037//0022-0663.91.3.564
- Harter, S. (1982). The perceived competence scale for children. *Child Development*, 53(1), 87-97. doi:10.2307/1129640
- Harter, S. (1988). *The self-perception profile for adolescents*. Unpublished manual, University of Denver, Denver, CO.
- Harter, S. (1999). *The construction of the self: A developmental perspective*. New York, NY: Guilford Press.
- Harter, S., Waters, P., & Whitesell, N. R. (1998). Relational self-worth: Differences in perceived worth as a person across interpersonal contexts. *Child Development*, 69(3), 756.

- Iwamasa, G. Y., & Smith, S. K., (1996). Ethnic diversity in behavioral psychology: A review of the literature [Abstract]. *Behavior Modification*, 20(1), 45-59. doi: 10.1177/01454455960201002
- 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. doi: 10.1111/1467-8624.00421
- Kenny, M. C. (2009). Children's self-concept: A multicultural comparison. *Professional School Counseling*, 12(3), 207-212.
- Kim, J. S., & Sunderman, G. L. (2005). Measuring academic proficiency under the no child left behind act: Implications for education equity. *Educational Researcher*, 34(8), 3-13. doi: 10.3102/0013189X034008003
- Lewis, M., & Sullivan, M. W. (2005). The development of self-conscious emotions. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (p. 194). New York, NY: Guilford.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83(4), 854-864.
- Marsh, H. W. (1984). Self-concept, social comparison and ability grouping: A reply to Kulik and Kulik. *American Educational Research Journal*, 21(4), 799-806.
- Marsh, H. W., Byrne, B. M., & Yeung, A. S. (1999). Causal ordering of academic self-concept and achievement: Reanalysis of a pioneering study and revised recommendations. *Educational Psychologist*, 34, 155-167. doi:10.1207/s15326985ep3403_2
- Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective. *Perspectives on Psychological Science*, 1(2), 133-163. doi:10.1111/j.1745-6916.2006.00010.x
- Marsh, H. W., & Hau, K. (2003). Big-fish-little-pond effect on academic self-concept: A cross-cultural (26-country) test of the negative effects of academically selective schools. *American Psychologist*, 58(5), 364-376. doi:10.1037/0003-066X.58.5.364
- Marsh, H. W., Kong, C. K., & Hau, K. T. (2000). Longitudinal multilevel models of the big-fish-little-pond effect on academic self-concept: Counterbalancing contrast and reflected-glory effects in Hong Kong schools. *Journal of Personality and Social Psychology*, 78(2), 337-349. doi:10.1037//0022-3514.78.2.337

- Marsh, H. E., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement and attainment over seven adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin*, *544*, 542-553. doi: 10.1177/0146167207312313
- Marsh, H. W., & Parker, J. W. (1984). Determinants of student self-concept: Is it better to be a relatively large fish in a small pond even if you don't learn to swim as well? *Journal of Personality and Social Psychology*, *47*(1), 213-231. doi:10.1037/0022-3514.47.1.213
- Marsh, H. W., & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure. *Educational Psychologist*, *20*(3), 107-123.
- Marsh, H. W., Trautwein, U., Lüdtke, O., & Köller, O. (2008). Social comparison and big-fish-little-pond effects on self-concept and other self-belief constructs: Role of generalized and specific others. *Journal of Educational Psychology*, *100*(3), 510-524. doi:10.1037/0022-0663.100.3.510
- Marsh, H. W., & Yeung, A.S. (1997). Causal effects of academic self-concept on academic achievement: Structural equation models of longitudinal data. *Journal of Educational Psychology*, *89*(1), 41.
- Molloy, L. E., Gest, S. D., & Rulison, K. L. (2011). Peer influences on academic motivation: Exploring multiple methods of assessing youths' most "influential" peer relationships. *The Journal of Early Adolescence*, *31*(1), 13-40.
- Ogbu, J. (2003). *Black students in an affluent suburb: A study of academic disengagement*. Mahwah, NJ: Erlbaum.
- O'Mara, A. J., Marsh, H. W., Craven, R. G., & Debus, R. L. (2006). Do self-concept interventions make a difference? A synergistic blend of construct validation and meta-analysis. *Educational Psychologist*, *44*(3), 181-206.
- Piers, E. V. (2002). *Piers Harris Children's Self-Concept Scale, second edition (Piers-Harris 2)*. Retrieved from the Western Psychological Services website: http://portal.wpspublish.com/portal/page?_pageid=53,112628&_dad=portal&_schema=PORTAL
- Pomerantz, E. M., Ruble, D. N., Frey, K. S., & Greulich, F. (1995). Meeting goals and confronting conflict: Children's changing perceptions of social comparison. *Child Development*, *66*(3), 723-738. doi: 10.2307/1131946
- Purkey, W. W. (1970). *Self concept and school achievement*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

- Rogers, C. M., Smith, M. D., & Coleman, J. M. (1978). Social comparison in the classroom: The relationship between academic achievement and self-concept. *Journal of Educational Psychology, 70*(1), 50-57. doi:10.1037//0022-0663.70.1.50
- Ruble, D. N., Boggiano, A. K., Feldman, N. S., & Loebel, J. H. (1980). Developmental analysis of the role of social comparison in self-evaluation. *Developmental Psychology, 16*(2), 105.
- Ryan, A. M. (2001). Peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*, 1135-1150. doi: 10.1111/1467-8624.00338
- Ryan, R. M., & Brown, K. W. (2005). Legislating competence: High-stakes testing policies and their relations with psychological theories and research. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 354-372). New York, NY: Guilford.
- Ryan, R. M. & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist, 55*, 68-78.
- SARC: *Dynamic 2010-2011 Reports*. (n.d.). Retrieved March 2, 2011
[http://web.\[INSERT SCHOOL DISTRICT\].k12.ca.us/index.aspx](http://web.[INSERT SCHOOL DISTRICT].k12.ca.us/index.aspx)
- Schunk, D. H. (1987). Peer models and children's behavioral change. *Review of Educational Research, 57*(2), 149-174.
- Schunk, D. H. (2005). Competence perceptions and academic functioning. In A. J. Elliot (Ed.), *Handbook of competence and motivation* (pp. 85-104). New York, NY: Guilford.
- Segall, M. H., Lonner, W. J., & Berry, J. W. (1998). Cross-cultural psychology as a scholarly discipline. *American Psychologist, 53*(10), 1101.
- Shavelson, R. J., & Bolus, R. (1982). Self-concept: The interplay of theory and models. *Journal of Educational Psychology, 74*, 3-17.
- Stapel, D. A., & Suls, J. (2004). Method matters: Effects of explicit versus implicit social comparisons on activation, behavior, and self-views. *Journal of Personality and Social Psychology, 87*, 860-875.
- Sternberg, R. J. (2005). Intelligence, competence, and expertise. In J. A. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 13-30). New York, NY: Guilford Press.
- Sue, S. (1999). Science, ethnicity, and bias. *American Psychologist, 54*(12), 1070.

- Suls, J. E., & Wheeler, L. E. (2000). *Handbook of social comparison: Theory and research*. New York, NY: Kluwer Academic.
- Tesser, A. (2003). Self-evaluation. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 275-290). New York, NY: Guilford.
- Tirozzi, G. N., & Uro, G. (1997). Education reform in the United States: National policy in support of local efforts for school improvements. *American Psychologist*, *52*(3), 241-249. doi:10.1037//0003-066X.52.3.241
- Trautwein, U., Ludtke, O., Marsh, H. W., & Nagy, G. (2009). Within-school social comparison: How students perceive the standing of their class predicts academic self-concept. *Journal of Educational Psychology*, *101*(4), 853-866. doi: 10.1037/a0016306
- Turner, J. C., Meyer, D. K., Midgeley, C., & Patrick, H. (2003). Teacher discourse and students' affect and achievement-related behaviors in two high mastery/high performance classrooms. *Elementary School Journal*, *103*, 357-382.
- Urduan, T., & Schoenfelder, E. (2006). Classroom effects on student motivation: Goal structures, social relationships, and competence beliefs. *Journal of School Psychology*, *44*(5), 331-349.
- Véronneau, M-H., Vitaro, F. B., Brendgen, M., Dishion, T. J., & Tremblay, R. E. (2010). Transactional analysis of the reciprocal links between peer experiences and academic achievement from middle childhood to early adolescence. *Developmental Psychology*, *46*(4), 773-790. doi:10.1037/a0019816
- Weinstein, R. S. (2002). *Reaching higher: The power of expectations in schooling*. Cambridge, MA: Harvard University Press.
- Wentzel, K. R. (1989). Adolescent classroom goals, standards for performance, and academic achievement: An interactionist perspective. *Journal of Educational Psychology*, *81*, 131-142.
- Wentzel, K. R. (2003). School adjustment. In W. Reynolds & G. Miller (Eds.), *Handbook of psychology: Vol. 7. Educational psychology* (pp. 235-258). New York, NY: Wiley.
- Wentzel, K. R. (2005). Peer relationships, motivation, and academic performance at school. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 279-296). New York, NY: Guilford.
- Wheeler, L., & Suls, L. (2005). Social comparison and self-evaluations of competence. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 566-578). New York, NY: The Guilford Press.

- Wigfield, A., & Eccles, J. S. (2001). *Development of achievement motivation*. San Diego, CA: Academic Press.
- Wigfield, A. E., Eccles, J., MacIver, D., Reuman, D., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Developmental Psychology, 27*, 552-565. doi:10.1037//0012-1649.27.4.552
- Wigfield, A., & Wagner, A. L. (2005). Competence, motivation, and identity development during adolescence. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 222-239). New York, NY: The Guilford Press.
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin, 90*, 245-271. doi:10.1037//0033-2909.90.2.245
- Zeidner, M. (1998). *Test anxiety: The state of the art*. New York, NY: Kluwer Academic.
- Zeidner, M., & Matthews, G. (2005). Evaluation anxiety: Current theory and research. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 141-163). New York, NY: Guilford.

APPENDIX A

PEPPERDINE UNIVERSITY

Research Study Participant Checklist

Who should complete this form? *Fifth-Grade Teachers Supporting this Research Study*

Instructions: Please complete this form in its entirety.

1. Description of Students.

- a. The students in my classroom are familiar with their 2010-2011 CST scores and their ranking (i.e., Far-below Basic, Below Basic, Basic, Proficient, and Advanced).

Yes No

- b. The students in my classroom are generally aware of their academic standing compared to their classmates.

Yes No

- c. The following students are Spanish-speakers who will require administration of the surveys in Spanish.

Student Name: _____ Primary Language:

Student Name: _____ Primary Language:

Student Name: _____ Primary Language:

Please add additional names on back of page if necessary.

- d. There are students in my class who meet one or more of the following ***exclusion criteria***:

Unable or unwilling to cooperate / Overtly hostile / Uncommunicative / Prone to exaggeration or other distortions / So disorganized in their thinking that their responses do not accurately reflect their feelings or behaviors / Possess poor English-language verbal ability (due to language background, neurological impairment, moderate to severe mental deficiency, among other causes).

Yes No

Please list the names of any student(s) who meet at least one of the above criteria for exclusion:

Please complete the following checklist indicating the status of student participation in the study:

Student Name	Consent Granted (Gift)	Consent Denied	Not Returned	Excluded With Consent (Gift)	Excluded without Consent
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

***NOTE: Please attach and return all consent forms along with this checklist to your principal or principal's designee.**

APPENDIX B

Pepperdine University Graduate School of Education & Psychology

School Recruitment Letter

Dear Mr./Ms. (*School Principal's Name*):

As the principal researcher of the above-referenced research study, I have received approval from your school board, Moreno Valley Unified School District, to invite schools to participate in the study titled, *Linking Self-Concept, Social Comparison and Academic Achievement in Preadolescents*. You may have received notice from your District's representative, XXXX XXXXXX, advising you of this approval.

If you choose to participate, your school will be part of a representative sample of four (4) elementary schools throughout the District participating in this project. This project will help school leaders and educators better understand the relationship between student beliefs and attitudes about their abilities and academic achievement. This study will be conducted during the month of March in the 2012 school year with students in 5th grade (with parental permission) in selected schools. In addition, participating teachers will be asked to review the survey instruments and make recommendations as to whether certain students are capable of completing the survey questions with fidelity.

What is involved for your school?

- School administrator will be asked to provide researcher with individual CST test scores in English Language Arts and Math, disaggregated by fifth-grade class for the 2010-2011 school year.
- School administrator/Principal shall arrange a quiet room designed for test-taking (i.e., library student lab, or assessment room) if available, with enough desks and chairs for an entire class.
- Participating fifth-grade teachers will be asked to distribute and collect and track permission materials provided to parents.
- Teachers will be asked to complete a brief participant checklist, indicating which students will be included in the study and which students, if any, meet the exclusion criteria.
- Teachers will be present when researcher(s) conduct the 30-40 minute survey on a scheduled date and time will be provided with all requirements and procedures to be followed during administration. Principal/Teachers shall make arrangements for students to return to a supervised waiting/holding area if for any reason, a student is unable to remain in the room for the duration of the survey administration.
- School administrator/Principal shall assist researcher with the rotation scheduling of the administration of the surveys, one class at a time.
- Timeline for data collection shall occur within 1 school day for all classes, and not exceed 2 days should there be unforeseen circumstances beyond researcher's control that prevent completion in a single day.
- Project staff will be on-site during the time the survey is administered to answer any questions and to supply any necessary materials.

What are the benefits and honorarium to your school?

- Your school will receive an individualized School Feedback Report that includes a summary of trends and any correlations between self-concept, comparison orientation and academic achievement in your school's 5th grade students; however, no individual student responses will be shared with District or school personnel.
- Your school will receive a \$100 honorarium in appreciation of the time and effort of school personnel to administer the survey.
- Each participating classroom teacher will receive a \$50 honorarium in appreciation of the time and effort of school personnel to administer the survey.

Your school will be entered into a draw for an additional award of \$100. In addition, each time a participating class achieves a 75% Permission Form return rate or higher (regardless of whether a student has permission to participate or not), your school will be entered into the draw again.

Included in this package are the following:

- Participant Checklist
- Project Description and Procedures (which includes, permission protocol details, request for CST student performance data, details regarding data sharing, and instructions for school personnel on day of data collection)
- Copy of the student questionnaire(s)

In addition, all project materials including parent permission materials are available to view and download on the project website at www.website2follow.com

Ethics Information

This research has been reviewed and ethics clearance has been granted from the *Institutional Review Board* at the Pepperdine University. If you have any comments or concerns resulting from your school's participation in this project, contact **Leola Oliver** at XXXXXXXX or by e-mail at XXXXXXXX. You may contact Dr. Devin Vodicka, Supervising Faculty, also, at XXXXXXXX or at XXXXXXXX. Feel free to contact the Institutional Review Board Manager, Jean Kang at XXXXXXXX or at XXXXXXXX.

What are the next steps?

- √ Complete and fax the attached *Fax-Back Form* OR contact the principal researcher, Leola L. Oliver, at XXXXXXXX if you have questions or require additional information.
- √ Read and sign the Principal's Agreement to Provide Administrative Support
- √ Set date/time for researcher to introduce the study to teachers at staff development and solicit involvement

I understand that school administrators and staff are busy and I wish to provide support in any way possible to assist your school's participation in this project. I will contact you within the next two weeks to provide you with more information about the project and to discuss your school's participation. I look forward to collaborating with you on this exciting project.

Sincerely,

Leola L. Oliver
Principal Researcher

School Fax Back Form

School Name: _____ Number of 5th Grade Classrooms: ____

Name of Principal: _____ Phone: _____

As principal/site administrator, I have read the School Recruitment letter and understand the nature of the proposed study and the extent of the involvement of the designated personnel and would like for _____ Elementary School to be one of the Moreno Valley Unified School District schools represented in the study, ***Linking Self-Concept, Comparison Orientation and Academic Achievement in Preadolescents.***

I, hereby, grant permission to Leola L. Oliver, the Principal Researcher of the above-referenced study, to recruit teachers and students from _____ Elementary School to act in support (teachers) of, and to participate(students) in this study.

The best timeframe for conducting the study is during the week of March _____, 2012 or April _____, 2012.

X _____
SIGNATURE DATE

(Print Name) E-MAIL

(*PLEASE RETURN by facsimile to XXXXXXXX or by E-mail attachment to
XXXXXXX.)

APPENDIX C

Pepperdine University Graduate School of Education & Psychology

Teacher Recruitment Letter

Dear Fifth-Grade Teacher:

As the principal researcher of the above-referenced research study, I have received approval from your school board, Moreno Valley Unified School District, to invite schools to participate in the study titled, *Linking Self-Concept, Social Comparison and Academic Achievement in Preadolescents*. You may have received notice from your District's representative, XXXX XXXXX, advising you of this approval.

If you choose to participate, your classroom will be part of a representative sample of classrooms from four (4) elementary schools throughout the District participating in this project. This project will help school leaders and educators better understand the relationship between student beliefs and attitudes about their abilities and academic achievement. This study will be conducted during the month of March or April in the 2012 school year with students in 5th grade (with parental permission) in selected schools. In addition, participating teachers will be asked to review the survey instruments and make recommendations as to whether certain students are capable of completing the survey questions with fidelity.

What is involved for your school?

- School administrator will be asked to provide researcher with individual CST test scores in English Language Arts and Math, disaggregated by fifth-grade class for the 2010-2011 school year.
- Fifth-grade teachers will be asked to distribute and collect and track permission materials provided to parents.
- Teachers will be asked to complete a brief participant checklist, indicating which students will be included in the study and which students, if any, meet the exclusion criteria.
- Teachers will be present when researcher(s) conduct the 30-40 minute survey on a scheduled date and time will be provided with all requirements and procedures to be followed during administration.
- Project staff will be on-site during the time the survey is administered to answer any questions and to supply any necessary materials.

What are the benefits and honorarium to your school?

- Your school will receive an individualized School Feedback Report that includes a summary of trends and any correlations between self-concept, comparison orientation and academic achievement in your school's 5th grade students; however, no individual student responses will be shared with District or school personnel.
- Your school will receive a \$100 honorarium in appreciation of the time and effort of school personnel to administer the survey.
- Each participating classroom teacher will receive a \$50 honorarium in appreciation of the time and effort of school personnel to administer the survey.

Your school will be entered into a draw for an additional award of \$100. In addition, each time a participating class achieves a 75% Permission Form return rate or higher (regardless of whether a student has permission to participate or not), your school will be entered into the draw again.

Included in this package are the following:

- Participant Checklist
- Project Description and Procedures (which includes, permission protocol details, request for CST student performance data, details regarding data sharing, and instructions for school personnel on day of data collection)
- Copy of the student questionnaire(s)

In addition, all project materials including parent permission materials are available to view and download on the project website at www.website2follow.com

Ethics Information

This research has been reviewed and ethics clearance has been granted from the *Institutional Review Board* at the Pepperdine University. If you have any comments or concerns resulting from your school's participation in this project, contact **Leola Oliver** at XXXXXXXX or by e-mail at XXXXXXXX. You may contact Dr. Devin Vodicka, Supervising Faculty, also, at XXXXXXXX or at XXXXXXXX. Feel free to contact the Institutional Review Board Manager, Jean Kang at XXXXXXXX or at XXXXXXXX.

What are the next steps?

- √ Read and sign the Teacher Recruitment Letter.
- √ Receive student recruitment materials (Student Recruitment Flyer, Parent Informed Consent Form, Participant Checklist, and Research Study Protocol and Procedures)
- √ On scheduled start date (date to be provided by Principal), teachers will follow instructions as provided in Research Study Protocol and Procedures

I understand that school administrators and staff are busy and I wish to provide support in any way possible to assist your school's participation in this project. I will coordinate with your school's principal within the next two weeks to provide you with a start date for the project and to answer any questions that may arise. If you have any questions, please feel free to use the contact information listed above. I look forward to working with you on this exciting project.

Sincerely,

Leola L. Oliver
Principal Researcher

Date

X _____
Teacher Signature

Date

By signing above, I confirm that I have read the School Recruitment letter and understand the nature of the proposed study and the extent of my involvement and agree to provide support as outlined above. I understand that my involvement is completely voluntary and will not extend beyond the parameters as set forth in this letter without my prior consent.

APPENDIX D

Participation Recruitment Flyer

Pepperdine University

Volunteers Wanted for a Research Study*We Need Your Help to Answer the Question:**"Is There a Connection Between the Way 5th Graders
Feel About Themselves as Learners and School
Achievement?"*

(The purpose of this research project is to help us understand how 5th grade students feel about themselves and as learners. The results will help us understand how these beliefs may be related to how well students perform in school.)

We are looking for 5th graders who are willing and able to complete a series of questions read aloud by the researcher.

You may not see a benefit from the study by participating, but your involvement may help teachers and school leaders find ways to improve teaching and learning.

Should you decide to participate, you will receive a reward as a token of appreciation.

Study Location: Your School's Library

To learn more about this research, you or your parents may call the researcher, Leola Oliver at XXXXXXXX. This research is conducted under the direction of Devin Vodicka, Supervising Faculty, Pepperdine University, XXXXXXXX. Feel free to contact the Institutional Review Board Manager, Jean Kang at XXXXXXXX or at XXXXXXXX.

APPENDIX E

Piers-Harris Children's Self-Concept Scale Score Form

<p>1. My classmates make fun of me. yes no</p> <p>2. I am a happy person. yes no</p> <p>3. It is hard for me to make friends. yes no</p>	<h2 style="text-align: center;">The Way I Feel About Myself</h2> <h3 style="text-align: center;">PIERS-HARRIS 2</h3> <h4 style="text-align: center;">AutoScore™ Form</h4> <p style="text-align: center;">by Steve F. Piers, Ph.D., Dale E. Harris, Ph.D., & David S. Herzberg, Ph.D.</p> <p style="text-align: center;">Published by WESTERN PSYCHOLOGICAL SERVICES wps 12001 Wilshire Boulevard Los Angeles, CA 90025-1001 Publishers and Distributors</p> <p>Client Name (or ID #) _____</p> <p>Student's Date _____ Age _____</p> <p>Gender (circle one) <input type="checkbox"/> Female <input type="checkbox"/> Male Grade _____</p> <p>School _____</p> <p>Teacher's Name (optional) _____</p> <p>Race/Ethnicity <input type="checkbox"/> Asian <input type="checkbox"/> Hispanic <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> Native American <input type="checkbox"/> Other</p> <p style="text-align: center;">Directions</p> <p>Here are some sentences that tell how some people feel about themselves. Read each sentence and decide whether it tells the way you feel about yourself. If it is true or mostly true for you, circle the word yes next to the statement. If it is false or mostly false for you, circle the word no. Answer every question, even if some are hard to decide. Do not circle both yes and no for the same sentence. If you want to change your answer, cross it out with an X and circle your new answer.</p> <p>Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark each sentence the way you really feel inside.</p> <p style="text-align: center;"><small>Copyright © 2003 by Steve F. Piers and Dale E. Harris. This is to be reproduced in whole or in part without written permission of Western Psychological Services. All rights reserved. Printed in U.S.A.</small></p> <p style="text-align: center;">WU 288A</p>
---	---

APPENDIX F

Iowa-Netherlands Comparison Orientation Measure, Modified

Iowa-Netherlands Comparison Orientation Measure

Most people compare themselves to other people. For example, they may compare the way they feel, what they think about things, how good they are, and what's going on in their lives with other people. There is nothing "good" or "bad" about comparing yourself to others. We would like to find out how much you compare yourself to other people. To do that we would like you to indicate how much you agree with each statement below, by using the following scale.

1 	2 	3 	4 	5 
NEVER!	NO	SOMETIMES		YES
ALWAYS!				

1. I often compare how my friends and family members do things to how other people do them.
2. I pay a lot of attention to how I do things compared to how other people do things.
3. To find out how well I have done something, I compare with how other people have done.
5. I compare myself to other people.
6. I like to compare my achievements with the achievements of other people.
7. I like to talk to other people about ways we are alike.
8. When I have a problem, I like to find out what other people think who have similar problems.
9. I like to know what others in the same situation as me would do.
10. If I want to learn more about something, I try to find out what others think about it.
11. I compare my life to the lives of other people.

Upward Comparison Scale

11. I like to compare myself to people who seem to have a better life.
12. To judge how well I do something, I compare myself to people who do it better.

Downward Comparison Scale

13. I like to compare myself to people who seem to have a worse life than me.
14. To judge how well I do something, I compare myself to people who do it worse than me.

APPENDIX G

School Recruitment Phone Call Protocol

The following protocol will be followed when contacting principals to solicit school participation in the study:

1. Review the rationale for selecting their school for inclusion and the purpose of the study.
2. Review teacher/student recruitment procedures and informed consent procedures found in Parent Informed Consent and Minor Assent letters.
3. Review school-site staff (principal/teachers) roles in providing administrative support as outlined in the School Recruitment Letter (Appendix A)
4. Review the scope of the data collection plan, including timelines (i.e., 1 school day, and not to exceed a 2nd day), and required/requested resources, as indicated in School Recruitment Letter (Appendix A).
5. Answer any questions.
6. Ask principal to complete and sign the Fax Back form; read and sign Principal's Agreement to Provide Administrative Support (within 48 hours of phone call), and select a date for researcher to introduce to fifth-grade teachers.

APPENDIX H

Minor Assent Form

Research Question:

"Is There a Connection Between the Way Students Feel about Themselves as Learners and How They Perform in School?"

Dear Student:

My name is Leola Oliver, and I am inviting you to help me out with a project. Your parents have said it is OK for me to talk with you about it. Before I explain the details, I want you to know that participating in this project is completely up to you. Even if you start the project and decide that you no longer want to continue, all you have to do is let your teacher know this, and we will stop. This is what you will be asked to do if you decide to help me out.

The purpose of my study is to find out how fifth-grade children really feel about themselves as learners. If you agree to participate, you and other classmates will be asked to answer a series of questions on two surveys. In one survey, there are sixty (60) questions, and you would provide a "yes" or "no" answer. In the other survey, there are fifteen (15) questions, and you would show how much you agree or disagree with a statement. In all, it should take no more than 1 hour to complete the surveys.

If you get bored or tired during the survey, just let your teacher know, and s/he can give your class a short break. If you are bothered by some of the questions, raise your hand and let your teacher know so s/he can talk about what is bothering you. Most of the time what you say to your teacher will not be repeated to your parents unless you wish for your teacher to do so. The only exception would be if your teacher feels your parents might be helpful to you if they knew what was going on. If information comes up that your teacher feels is in your best interest to share with others, your teacher will talk to you about it before speaking with your parents or anyone else. By helping me out with this project, you may not find out information that will be helpful to you. On the other hand, what I find out from you may help us figure out how to help others.

So that you know, at some point, it will be necessary for me to see your individual CST test scores from last year in order to complete my study. Also, your District and school will receive a group report, but will not be able to see your individual responses to the questions. When the results of this project are presented, the names of the children and families participating in the study will not be shared with the public.

When you have finished answering all questions, you will be given a reward (i.e., specialty pencil and stickers) as my way of saying thank you.

If you have any questions, you may contact me at XXXXXXXX. You may also contact my supervising chairperson, Devin Vodicka at XXXXXXXX, or Jean Kang, at XXXXXXXX.

For your records, you may keep a copy of this form if you wish.

Child's signature

Date

Researcher's signature

Date assent obtained

Formulario de Consentimiento Menor

Pregunta de investigación:

"Existe una conexión entre la forma de Los estudiantes sienten acerca de sí mismos como aprendices y cómo realizan en la escuela?"

Estimado Estudiante:

Mi nombre es Leola Oliver, y estoy invitarte a ayudarme con un proyecto. Sus padres han dicho está bien para mí hablar con usted sobre ello. Antes de explicar los detalles, quiero que sepas que participar en este proyecto es completamente de usted. Incluso si iniciar el proyecto y decidir que ya no desea continuar, todo lo que tienes que hacer es dejar tu profesor sabe esto y nos detendremos. Esto es lo que se le pedirá hacer si decides ayudarme.

El propósito de mi estudio es encontrar a los niños de quinto grado cómo realmente siente acerca de sí mismos como estudiantes. Si usted acepta participar, usted y otros compañeros le pedirá que responda a una serie de preguntas en dos encuestas. En una encuesta, hay 60 sesenta preguntas y proporcionaría un "sí" o "no" respuesta. En la otra encuesta, existen 15 quince preguntas y mostraría cuánto está de acuerdo o en desacuerdo con una declaración. En total, debería tener no más de 1 hora para completar las encuestas.

Si se obtienen aburrido o cansado durante la encuesta, sólo saber tu profesor y puede dar su clase una breve pausa. Si son molestados por algunas de las preguntas, levantar la mano y dejar tu profesor sabe lo que puede hablar acerca de lo que es molestarle. La mayor parte del tiempo lo que dices al profesor no se repetirán a tus padres a menos que desee para que tu profesor hacerlo. La única excepción sería si el profesor siente que tus padres podrían ser útiles a usted si sabían lo que estaba pasando. F información surge que el profesor siente que está en su mejor interés para compartir con otros, el profesor hablar a usted antes de hablar con sus padres o nadie.

Por ayudarme con este proyecto, no puede encontrar información que será útil para usted. Por otro lado, lo que me parece que puede ayudarnos a averiguar cómo ayudar a los demás. Por lo que saben, en algún momento, será necesario para mí ver tu CST individual prueba resultados desde el año pasado a fin de completar mi estudio. También, recibirá un informe del grupo de su distrito y la escuela, pero no será capaces de ver sus respuestas individuales a las preguntas. Cuando se presentan los resultados de este proyecto, los nombres de los niños y las familias que participan en el estudio no se compartirán con el público. Cuando haya terminado de contestar todas las preguntas, se dará una recompensa (es decir, lápiz de especialidad y adhesivos) como mi forma de decir gracias.

Si tienes alguna pregunta, puede contactar conmigo al XXXXXXXX. También puede comunicarse con mi Presidente supervisor, Devin Vodicka en XXXXXXXX, o Jean Kang, en XXXXXXXX.

Para sus registros, unidad organizativa y puede conservar una copia de este formulario si lo desea.

Firma del niño fecha

Dictamen de fecha de firma del investigador obtenido

APPENDIX I

Parental Informed Consent Letter

[DATE]

Dear Parent:

My name is Leola Oliver, and I am a graduate student at Pepperdine University, seeking a doctorate degree in Education. I am currently recruiting students to participate in my study. The research question is: *“Is There a Connection between How Students Feel about Themselves as Learners and How They Perform in School?”*

Your child has been invited to join my research study. Please take whatever time you need to discuss the study with your family and friends or with anyone else you wish. The decision to let your child participate, or not, is completely up to you.

PURPOSE OF THE STUDY: Research shows that children often compare themselves to others to judge how well they do things. The purpose of this study is to find out how your child and his/her classmates feel about themselves as learners. This study will show if these views are related to their performance in school. The results of this study may help teachers and school leaders create better learning environments.

Your child will be asked to complete two surveys in one session. The first survey measures self-concept which is based on how an individual feels about his/her skills and abilities, interactions with others and physical self-image. This survey has sixty (60) questions that are answered with a “Yes” or “No” answer. Completing them should take approximately 20 to 30 minutes. The other survey measures how much an individual compares him/herself to others and has fifteen (15) questions and can be completed in 5 to 10 minutes. In all, we think this process will take less than one hour. Your child’s teacher will be present to help answer any questions your child may have.

We may stop the study or remove your child from the study at any time if we believe it is in your child’s best interest. We may also remove your child from the study for various other reasons. We can do this without your consent. Your child can choose to stop participating at any time. If your child stops he/she will not lose any benefits.

RISKS: This study involves the following, minimal risks: 1). somewhat likely - boredom, tiredness; and 2). less likely, but important - feelings of anxiety if not used to sharing feelings. The students will be told not to share their answers with anyone for added protection and privacy. There may be other risks that we cannot predict.

BENEFITS: While there is no guarantee, your child may benefit from improvements in teaching practices and better learning experiences as a result of what is learned from this study. We cannot guarantee that this will be the outcome for your child; however, others

may benefit in the future from the information we find in this study. *For participating in this study, your child will receive a token gift (i.e., specialty pencil, stickers or similar item) to show how much we appreciate their help. If you grant permission, but for whatever reason, your child is excluded from the study, he or she will still receive a gift.*

CONFIDENTIALITY: Your child's name will not be used when the results are published. Every effort will be made to keep surveys, research records, and other personal information private. ***Please be aware that the Researcher and Supervising Chairperson will have access to your child's individual 2009-2010 and 2010-2011 California Standards Test Scores.*** Your child's school and District will receive a group report but will not be provided access to individual student responses. We will not share any information that identifies your child or your family with the public. All records relating to this study will be kept safe and secured in a locked safe for three years. After three years, all records will be destroyed. *Only the following people will have access to your child's information: 1). Leola Oliver, Researcher, and 2). Devin Vodicka, Ed.D. Supervising Chairperson.*

YOUR CHILD'S RIGHTS AS A RESEARCH PARTICIPANT: Participation in this study is voluntary. Your child can decide not to participate at all or to leave the study at any time. If you or your child chooses not to participate, your child will not lose any privileges or experience negative consequences. If your child decides to leave the study, he/she must follow these procedures: 1). Raise his/her hand and quietly ask to be excused from the study. 2). When your child is excused from the study, he/she must exit quietly and go to a designated waiting area. Your child's principal and teacher will receive a copy of the results and will be able to share how your child and his/her classmates feel about themselves as learners.

You may change your mind about granting permission to include your child in this study, even after the surveys have been completed. You may contact the researcher at any time before the study is completed to cancel your child's participation. You may contact me at XXXXXXXX or by email at XXXXXXXX. You may also contact Devin Vodicka, the Faculty Sponsor, by email at XXXXXXXX. Please contact me or Dr. Vodicka if you have questions about the study, any problems, or if your child experiences anything unexpected, uncomfortable or unusual. In addition, feel free to contact the Institutional Review Board Manager, Jean Kang at XXXXXXXX or at XXXXXXXX.

.....

Permission for a Child to Participate in Research

Yes. As parent or legal guardian, I authorize _____ (child's name) to participate in the research study described in this form.

No. As parent or legal guardian, I ***do not*** authorize _____ (child's name) to participate in the research study described in this form.

Parent or Legal Guardian's Signature Date:

X _____ Date: _____

You may keep a copy of this form if you wish.

Carta de consentimiento parental

[FECHA]

Estimado padre:

Mi nombre es Leola Oliver, y yo soy un estudiante graduado en la Universidad de Pepperdine, buscando un doctorado en educación. Actualmente estoy buscando a los estudiantes a participar en mi estudio. La pregunta de investigación es: *"Existe una conexión entre cómo estudiantes sienten acerca de sí mismos como aprendices y cómo realizan en la escuela?"*

Su hijo ha sido invitado a unirse a mi estudio de investigación. Tómese todo el tiempo necesario para discutir el estudio con su familia y amigos o con cualquier otra persona que desee. La decisión de dejar a su hijo participar, o no, depende completamente de usted.

Propósito del estudio: la investigación muestra que los niños a menudo ellos mismos comparar a otros juzgar cómo hacen las cosas. El propósito de este estudio es averiguar cómo su hijo y sus compañeros sienten acerca de sí mismos como estudiantes. Este estudio mostrará si estas vistas están relacionadas con su desempeño en la escuela. Los resultados de este estudio pueden ayudar a los profesores y líderes escolares creación mejores experiencias de aprendizaje.

Su hijo le pedirá completar dos encuestas en una sola sesión. La primera encuesta mide el concepto que se basa en cómo una persona se siente acerca de sus conocimientos y habilidades, interacciones con otros y autoimagen física. Esta encuesta tiene 60 sesenta preguntas que son respondidas con un "Sí" o "No" respuesta. Completarles debería tomar aproximadamente 20 a 30 minutos. La otra encuesta mide cuánto un individuo le ella compara a otros y tiene 15 quince preguntas y puede completarse en 5 a 10 minutos. En total, creemos que este proceso tardará menos de una hora. Maestro de su hijo estará presente para ayudar a responder cualquier pregunta que pueda tener su hijo. Podemos detener el estudio o quitar a su hijo desde el estudio en cualquier momento si creemos que es en el interés superior del niño. También podemos quitar a tu hijo del estudio por otras razones. Podemos hacerlo sin su consentimiento. Su hijo puede optar por dejar de participar en cualquier momento. Si su hijo se detiene no perderá ningún beneficio.

Riesgos: Este estudio implica el riesgo mínimo, siguiente: 1). un poco probable - aburrimiento, cansancio; (y 2). Menos probable, pero importante - sentimientos de ansiedad si no se utilizan para compartir sentimientos. Los estudiantes dirán no a compartir sus respuestas con nadie para mayor protección y privacidad. Puede haber otros riesgos que no podemos predecir.

Beneficios: mientras que no hay ninguna garantía, su hijo podrá beneficiarse de mejoras en la enseñanza de prácticas y mejores experiencias de aprendizaje como resultado de lo que se aprende de este estudio. No podemos garantizar que este será el resultado de su hijo; Sin embargo, otros pueden beneficiarse en el futuro de la información que encontramos en este estudio. *Para participar en este estudio, su niño recibirá un regalo simbólico (es decir, lápiz de especialidad, pegatinas o elemento similar) para mostrar cuánto apreciamos su ayuda. Si concede permiso, pero por alguna razón, su hijo está excluido el estudio, él o ella todavía recibirán un regalo.*

Confidencialidad: El nombre de su hijo no se utilizará cuando se publican los resultados. Será hacerse todo lo posible para mantener las encuestas, registros de investigación y otra información personal privada. Tenga en cuenta que el investigador y supervisor de este proyecto tendrán acceso al individuo de su hijo 2010-2011 CST resultado. Distrito y escuela de su hijo se recibe un informe de grupo pero no se proporciona acceso a las respuestas de cada alumno. No compartiremos ninguna información que identifica a su hijo o su familia con el público. Todos los registros relativos a este estudio se mantendrán seguros y protegidos de forma segura bloqueada durante tres años. Después de tres años, se destruirán todos los registros. *Sólo las*

siguientes personas tendrán acceso a la información de su hijo: 1). Leola Oliver, investigador y 2). Devin Vodicka, Ed.D., Supervisor de este proyecto.

Los derechos como a investigación participante su hijo: La participación en este estudio es voluntaria. Su hijo puede decidir no participar en absoluto ni a dejar el estudio en cualquier momento. Si usted o su hijo decide no participar, su hijo no perder ningún privilegio ni experimentar consecuencias negativas. Si su hijo decide dejar el estudio, deben seguir estos procedimientos: 1). levantar su mano y pedir tranquilamente a ser dispensados del estudio. 2). Cuando su hijo se excusó del estudio, debe salir tranquilamente y vaya a un área designada de espera. Director y profesor de su hijo recibirán una copia de los resultados y podrán compartir cómo su hijo y sus compañeros sienten acerca de sí mismos como estudiantes.

Puede cambiar de opinión acerca de cómo conceder permiso para incluir a su hijo en este estudio, incluso después de han concluido los estudios. Puede contactar con el investigador en cualquier momento antes de que finalice el estudio para cancelar la participación del niño. Puede hablar conmigo por teléfono al XXXXXXXX o por correo electrónico a XXXXXXXX. DevinVodicka, el supervisor de este proyecto, también puede contactar por correo electrónico a XXXXXXXX. Usted puede habla con mí o Dr. Vodicka si tienes preguntas sobre el estudio, los problemas, o si su hijo experimenta nada inesperado, incómodos o inusual. Además, usted puede hablar con el administrador de Junta de revisión institucional, Jean Kang al XXXXXXXX o al XXXXXXXX.

.....
.....

Permiso para un niño a participar en la investigación

- Sí.** Como padre o tutor legal, autorizo a _____ (nombre del niño) para participar en el estudio de investigación descrito en este formulario.
- No.** Como padre o tutor legal, **no** autorizar _____ (nombre del niño) para participar en el estudio de investigación descrito en este formulario.

Padres o firma fecha del tutor Legal:

X _____ Date: _____

Si lo desea, podrá mantener una copia de este formulario.

APPENDIX J

Research Study Protocol and Procedures

The following steps are to be followed:

(Prior to the collection of data)

1. **Researcher:** Acquire District's Approval to conduct Research
2. **Researcher:** Solicit school participation by sending *School Recruitment Letter* and copies of *Principal's and Teacher's Agreement to Support Research* to principals.
3. **Principal:** Read School Recruitment letter. Contact principal researcher for questions.
4. **Researcher:** Follow up with Principals by telephone to request completion of *Fax Back Form*, signing of *Principal's Agreement to Support Research*, and set a date for researcher to introduce study to teachers at staff development.
5. **Researcher:** Introduce study to fifth-grade teachers and request signatures on *Teacher Agreement to Support Research*
6. **Researcher:** Provide teachers with *Participant Checklist*, *Student Recruitment Flyers*, and *Parent Informed Consent Letters (PICL)*.
7. **Teachers:** Read aloud, the *Student Recruitment Flyer* to introduce study to students. Then, distribute to **all students (send home 2 copies each)**, the *Parent Informed Consent*. Parents should sign both copies and keep one for their records.
8. **Teachers:** Collect returned PICLs and log on *Participant Checklist*.
9. **Teachers:** Complete *Participant Checklist* and return to principal's designee by April __, 2012.
10. **Principal:** Collect and return to Researcher all *Participant Checklists* and *Parent Informed Consent* letters by _____, 2012.
11. **Principal:** Notify teachers of the rotation schedule: _____ (add teacher name) on _____ (date), at _____ a.m. /p.m. (time) shall report to _____ (add location) for administration of the surveys. Notify all teachers that **Spanish Only** version of the surveys will be administered on the same date at _____ a.m. /p.m. in the same location. Spanish-speaking students from each classroom shall be sent to the location at the designated time to complete the surveys. **Disruptive or otherwise uncooperative students** shall be sent to this location

[Insert Name of Location and Supervising Personnel]
12. **Teachers:** Prepare quiet activities or lesson material (i.e., crossword puzzles, etc.) for each non-participating student, as well as several additional sets in the event some students change their mind about participating.

(On Day of Data Collection)

1. **Researcher & Assistants:** Arrive at school-site 1-hour prior to start and report to Principal's office. Provide
2. **Principal:** Provide researcher and assistants with escort to predetermined survey administration area and remind teachers of their time to report.
3. **Researcher & Assistants:** Arrange room (including sitting area for students who are not participating) and prepare coded lists of participants for attendance reporting.
4. **Teachers:** As class is waiting in line to receive codes, Teacher will lead non-participating students to a desk/table at the back of the room to work quietly on teacher-selected, predetermined materials and assist with supervision.
5. **Researcher & Assistants:** As students arrive at survey administration area, provide them with a post-it sized card with their individual code number on it.
6. **Researcher & Assistants:** Instruct students to write their code number on their survey documents. Take attendance, again, calling out code numbers. When all students are accounted for, begin.
7. **Principal Researcher:** Reads content of *Minor Assent Form* to students. Answer any questions. Asks, "Is there anyone who feels that they would like to change their mind or be excused from participating in the study?" If so, direct them to report to their teacher at the back of the room.
8. **Principal Researcher:** Deliver instructions. Ask if there are any questions. Answer questions. Administer surveys, allowing for a stretch break in-between.
9. **Researcher & Assistants:** At the completion of the surveys, Researcher and Assistants will call out code numbers and ask students to turn in surveys one at a time. Research assistants will check each number off on the checklist to account for the return of all surveys. As students turn in surveys, they will be given a *gift* in exchange for their participation.
10. **Research Assistants:** Provide teacher with pre-counted number of *gifts* for all students who received permission to participate, but were excluded.
11. **Principal Researcher:** Thanks students/teacher for their participation and support. Provide teacher with \$50 gift certificate.
 - a. **Spanish-Only Administration:** The same entry procedure shall be followed, except that Researcher shall provide supervision as students are being accounted for and provided code numbers. **Principal Researcher** will escort students back to class.
12. **Researcher & Assistants:** Organize materials, return room to its original condition and return to Principal's office to do the following:
 - a. Say "Thank You" for allowing the school's participation
 - b. Provide Principal with \$100 gift certificate.

- c. Inform Principal when to expect to be notified of the results of the additional \$100 award for highest participation, and when to expect to receive a copy of the feedback report and summary of findings.

APPENDIX K

Permission from School District



Board of Education
 1515 North
 Hollywood Avenue
 Los Angeles,
 California
 90047-2399
 Telephone: (213) 341-2399
 Fax: (213) 341-2399

Moreno Valley Unified School District

25000 Alhambra Boulevard
 Moreno Valley, California 92555
 (951) 371-7300
 www.mvunified.net

The content is the property of the district and is not to be distributed outside the district.

March 2, 2012

Leola L. Oliver

Dear Ms. Oliver:

I have reviewed your study proposal "Linking Self-Concept, Social Comparison and Academic Achievement in Pre-Adolescents (Fifth-Grade)" and approve you conducting this study in Moreno Valley USD schools/classrooms. I understand that your study will require the administration of two surveys to 5th grade classrooms in multiple schools within our district and will also require the collection of test information for those classrooms. This office will notify principals that permission for the study has been granted. I will collect a list of school sites within our district interested in participating in this study and will forward this list to you. You may then make contact with those elementary school principals in order to initiate your study. Once participating classrooms have been identified, I will work with you to provide required test data.

Please send a copy of findings of your study upon conclusion. Give me a call if you need additional information or assistance.

Sincerely,

Dan Reed, Ph.D.
 Director, Accountability & Assessment

APPENDIX L

IRB Training Completion Report

Completion Report

Page 1 of 2

CITI Collaborative Institutional Training Initiative**Graduate and Professional School IRB Members -
Basic/Refresher Curriculum Completion Report
Printed on 10/31/2011**

Learner: Leola Oliver (username: lloiver)
Institution: Pepperdine University
Contact Information

Department: Graduate School of Education and Psychology

Graduate & Professional School IRB Members - Basic/Refresher:**Stage 1. Basic Course Passed on 10/31/11 (Ref # 6894239)**

Elective Modules	Date Completed	Score
Avoiding Group Harms: U.S. Research Perspectives	10/18/11	3/3 (100%)
Avoiding Group Harms: International Research Perspectives	10/18/11	3/3 (100%)
Introduction	10/18/11	no quiz
Belmont Report and CITI Course Introduction	10/18/11	3/3 (100%)
Students in Research	10/18/11	8/10 (80%)
History and Ethical Principles - SBR	10/18/11	3/4 (75%)
History and Ethical Principles	10/18/11	5/6 (83%)
Defining Research with Human Subjects - SBR	10/18/11	5/5 (100%)
The Regulations and The Social and Behavioral Sciences - SBR	10/18/11	4/5 (80%)
Basic Institutional Review Board (IRB) Regulations and Review Process	10/18/11	5/5 (100%)
Assessing Risk in Social and Behavioral Sciences - SBR	10/23/11	5/5 (100%)
Informed Consent - SBR	10/23/11	4/5 (80%)
Informed Consent	10/23/11	3/4 (75%)
Privacy and Confidentiality - SBR	10/23/11	4/5 (80%)
Social and Behavioral Research for Biomedical Researchers	10/23/11	4/4 (100%)
Records-Based Research	10/23/11	2/2 (100%)
Genetic Research in Human Populations	10/23/11	2/2 (100%)
Research With Protected Populations - Vulnerable Subjects: An Overview	10/23/11	4/4 (100%)
Research with Prisoners - SBR	10/23/11	4/4 (100%)

Vulnerable Subjects - Research Involving Prisoners	10/23/11	4/4 (100%)
Research with Children - SBR	10/31/11	4/4 (100%)
Vulnerable Subjects - Research Involving Children	10/31/11	3/3 (100%)
Research in Public Elementary and Secondary Schools - SBR	10/31/11	4/4 (100%)
Vulnerable Subjects - Research Involving Pregnant Women, Human Fetuses, and Neonates	10/31/11	3/3 (100%)
International Research - SBR	10/31/11	3/3 (100%)
International Studies	10/31/11	1/1 (100%)
Internet Research - SBR	10/31/11	4/4 (100%)
FDA-Regulated Research	10/31/11	4/5 (80%)
Human Subjects Research at the VA	10/31/11	3/3 (100%)
Research and HIPAA Privacy Protections	10/31/11	3/5 (60%)
Vulnerable Subjects - Research Involving Workers/Employees	10/31/11	3/4 (75%)
Hot Topics	10/31/11	no quiz
Conflicts of Interest in Research Involving Human Subjects	10/31/11	5/5 (100%)
The IRB Member Module - "What Every New IRB Member Needs to Know"	10/31/11	5/7 (71%)
I have agreed to be an IRB Community Member ... Now What?	10/31/11	4/5 (80%)
Stem Cell Research Oversight (Part I)	10/31/11	3/5 (60%)

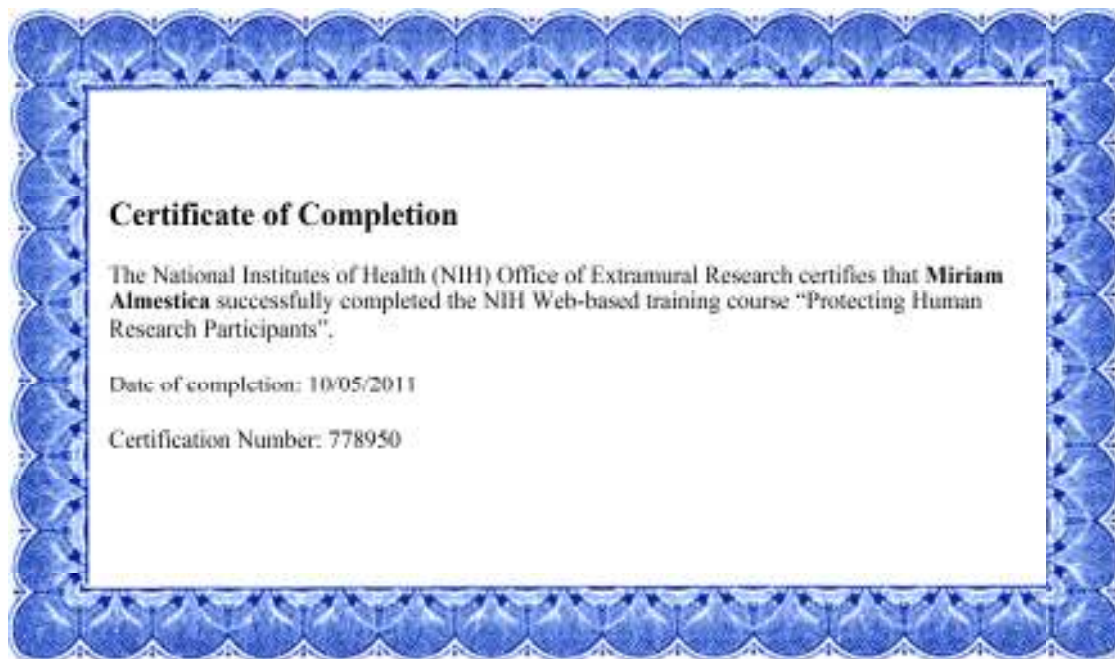
For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiler Ph.D.
 Professor, University of Miami
 Director Office of Research Education
 CITI Course Coordinator

[Return](#)

APPENDIX M

Research Assistant's NIH Training Completion Certificate



APPENDIX N

Research Assistant's IRB Training Completion Report

CITI Collaborative Institutional Training Initiative

Graduate & Professional School Social & Behavioral Research -
 Basic/Refresher Curriculum Completion Report
 Printed on 2/12/2012

Learner: Kristin Oliver (username: kno23)
 Institution: Pepperdine University
 Contact Information: 7981 Ojai Drive
 Palmdale, Ca 93551
 Department: Department of Education
 Phone: 6613646919
 Email: kno23@pepperdine.com

Social & Behavioral Research - Basic/Refresher: Choose this group to satisfy CITI training requirements for investigators and staff involved primarily in Social/Behavioral Research with human subjects.

Stage 1, Basic Course Passed on 02/12/12 (Ref # 7466702)

Required Modules	Date	
	Completed	Score
Belmont Report and CITI Course Introduction	02/11/12	3/3 (100%)
Students in Research	02/11/12	8/10 (80%)
History and Ethical Principles - SBR	02/11/12	4/4 (100%)
Defining Research with Human Subjects - SBR	02/12/12	4/5 (80%)
The Regulations and The Social and Behavioral Sciences - SBR	02/12/12	5/5 (100%)
Assessing Risk in Social and Behavioral Sciences - SBR	02/12/12	5/5 (100%)
Informed Consent - SBR	02/12/12	5/5 (100%)
Privacy and Confidentiality - SBR	02/12/12	5/5 (100%)
Research with Prisoners - SBR	02/12/12	4/4 (100%)
Research with Children - SBR	02/12/12	4/4 (100%)
Research in Public Elementary and Secondary Schools - SBR	02/12/12	4/4 (100%)
International Research - SBR	02/12/12	3/3 (100%)
Internet Research - SBR	02/12/12	4/4 (100%)
Research and HIPAA Privacy Protections	02/12/12	4/5 (80%)
Vulnerable Subjects - Research involving Workers/Employees	02/12/12	4/4 (100%)
Conflicts of Interest in Research Involving Human Subjects	02/12/12	3/5 (60%)

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and

APPENDIX P

Letter of Offer for Non-University Sponsored Research Assistant Position

Miriam Almestica

Date: 3/2/2012

Re: LINKING SELF-CONCEPT, SOCIAL COMPARISON AND ACHIEVEMENT IN
PREADOLESCENTS

Dear Miriam:

I am pleased to offer you a Research Assistantship (RA) to support my dissertation in the pursuit of doctoral degree at Pepperdine University. Your compensation will be paid at a rate of \$20/hr. as follows:

- **Training:** \$100 for completion of CITI.org research involving human subjects (1/2 paid upon completion and ½ paid on final day of administration of surveys) – *Alternates shall only receive 100% of payment for human subject research training if services are needed. If the services of an alternate are not needed, and human subjects training is not used in connection with this study, researcher shall compensate alternate a flat rate of \$50 for the completion of such training by April 23, 2012.*
- **Administration Training:** \$20/hr. for 2 hours of preparation. (plus lunch)
- **Administration of Surveys:** \$20/hr.
- **Mileage Reimbursement:** Reimbursement shall be paid at the 2012 IRS mileage reimbursement rate of 55.5 cents per mile;
- **Meals:** Meals shall be provided or reimbursed (not to exceed \$8.00 w/receipt) by PR at week end (Fri.)
- Estimated time per day is 6 to 8 hours;
- Estimated number of days – 2 to 3 days over a 1 week period. Data collection may extend into the following week depending on school schedules.

The administration training will take place on Sat., Mar. 10, 2012 between 10:00 a.m. and 1:00 p.m. or on an agreed upon date and time prior to Mar. 16, 2012 at Pepperdine University, 6100 Center Drive, (suite to be determined), Los Angeles, CA 90045. The estimated start date for data collection is the week of March 19, 2012 (the earliest) or the week of April 16, 2012 (the latest).

I, Leola Oliver, will be your Principal Researcher (PR) in this effort, and you will join this research group as a colleague. This relationship shall be similar to that of a student/teacher relationship and you will be expected to honor the principal researcher's scholarly traditions and procedures while conducting your research.

Thank you for your interest in assisting with this research project.

Sincerely,

Leola L. Oliver,
Doctoral Candidate – Pepperdine University

Dear Ms. Oliver (Principal Researcher):
The above appointment is acceptable to me.

Signature

Date

PEPPERDINE UNIVERSITY

Research Assistant Confidentiality Agreement

This study, *Linking Self-Concept, Social Comparison and Achievement in Preadolescents*, is being undertaken by Leola L. Oliver at Pepperdine University.

The study has two objectives:

1. To examine between-school and within-school achievement patterns and to explore any similarities or differences;
2. To examine the extent to which, if at all, there are correlations between self-concept, social comparison orientation and their relationship, if any, with academic achievement.

Data from this study will be used to help school leaders understand how self-concept and social comparison processes may interact with academic achievement. The data from this study will be useful to school leaders in decision-making with respect to student grouping practices where ability is a consideration.

I, (name of research assistant), agree to:

1. Keep all the research information shared with me confidential by not discussing or sharing the research information in any form or format (e.g. disks, tapes, transcripts) with anyone other than the Principal Investigator(s);
2. Keep all research information in any form or format secure while it is in my possession;
3. Return all research information in any form or format to the Principal Investigator(s) when I have completed the research tasks;
4. After consulting with the Principal Investigator(s), erase or destroy all research information in any form or format regarding this research project that is not returnable to the Principal Investigator(s) (e.g. information stored on computer hard drive).

Research Assistant:

(Print name) (Signature) (Date)

Principal Investigator:

(Print name) (Signature) (Date)

If you have any questions or concerns about this study, please contact: Devin Vodicka, Ed.D.
XXXXXXXXX or XXXXXXXXX.

This study has been reviewed and approved by the Institutional Review Board (IRB) at Pepperdine University. For questions regarding participants' rights and ethical conduct of research, contact the IRB Manager, Jean Kang at XXXXXXXXX or at XXXXXXXXX.